

# JVC

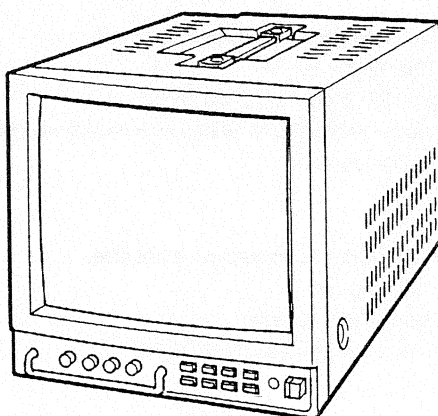
## SERVICE MANUAL

### COLOUR VIDEO MONITOR

# TM-1000PS

BASIC CHASSIS

KII



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# SPECIFICATIONS

Item	Content
<b>Dimensions</b> <b>Weight</b> <b>Color system</b> <b>Power Input</b> <b>Power consumption</b> <b>Picture Tube</b>  <b>Screen Size</b> <b>Scanning frequency</b>  <b>High voltage</b> <b>Horizontal resolution</b> <b>Speaker</b> <b>Audio output</b>	22.3cm(W) × 32.74cm(D) × 22.7cm(H) 9kg PAL/SECAM system AC 220 - 240V 50/60Hz , DC 12V AC 0.39A , DC 3A 10" (measured diagonally), 90° deflection, in-Line gun, data grade tinted CRT dot pitch 0.47mm 173mm(W) × 137mm(H) (H) 15.625KHz (V) 50Hz 21kV (at zero beam current) More than 300 lines 8cm round(8Ω) × 1 1W
<b>INPUT A</b>  VIDEO  AUDIO	BNC × 2(IN/OUT), Bridged connection is possible. VS 1Vp-p, 75Ω, negative A termination switch is provided.(75Ω/OPEN) RCA pin connector × 2(IN/OUT), Bridged connection is possible. 390mVrms, High impedance
<b>INPUT B</b> <b>/EXT SYNC</b> VIDEO /SYNC	BNC × 2(IN/OUT), Bridged connection is possible. VS 1Vp-p, 75Ω, negative SYNC 1 - 4Vp-p, 75Ω, negative A termination switch is provided.(75Ω/OPEN)
<b>Y/C INPUT</b>  Y/C  AUDIO	7-pin connector × 2(IN/OUT), Bridged connection is possible. Y 1Vp-p, 75Ω, negative C 0.3Vp-p(burst), 75Ω A termination switch is provided.(75Ω/OPEN) RCA pin connector × 2(IN/OUT), Bridged connection is possible. 390mVrms, High impedance
<b>ACCESSORY</b>	Power cord(approx. 2m) × 1
<b>OPTION</b>	RK-10E(RACK MOUNT ADAPTOR)

*Design & specification subject to change without notice.*

# SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may create shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when re-pairing.**  
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⚡) side GND, the NEUTRAL (↗) side GND and EARTH (⊕) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time. If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B<sub>1</sub> POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
9. **Isolation Check (Safety for Electrical Shock Hazard)**  
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
  - (1) **Dielectric Strength Test**  
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.  
(. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.) This method of test requires a test equipment not generally found in the service trade.
  - (2) **Leakage Current Check**  
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.) Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
    - **Alternate Check Method**  
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.) Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

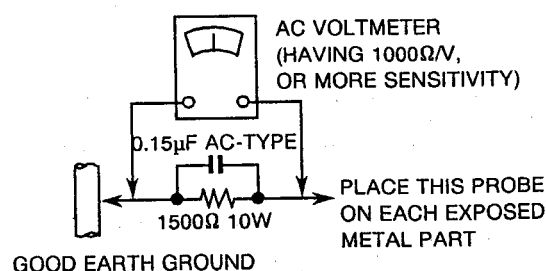
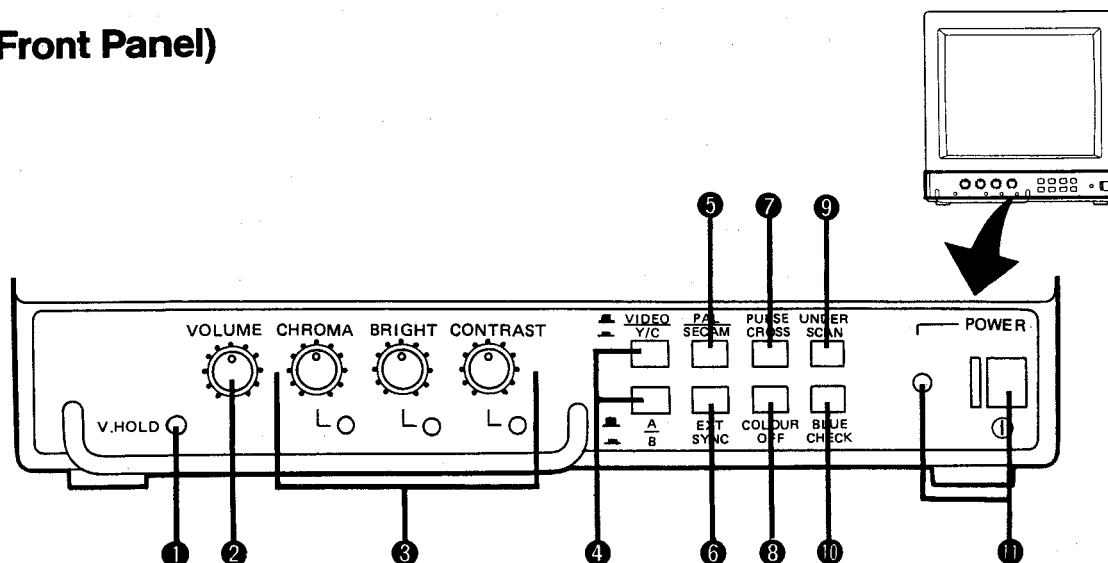


Fig.A

# OPERATING INSTRUCTIONS

## CONTROLS AND CONNECTORS

### (Front Panel)



#### Front Panel

##### ① V. HOLD control

Turn to adjust the vertical synchronization of the picture.

##### ② VOLUME control

Turn clockwise to make the sound louder. Counterclockwise to make it softer.

##### ③ Picture controls

Use to optimize the picture. The centre click position of each control is its standard setting. This standard setting can be varied (preset) by turning the SUB control screws at the side of the controls. Use a screwdriver to turn the SUB controls.

###### • CHROMA control

Turn to adjust the colour density of the picture to your preference.

###### • BRIGHT control

Turn to adjust the picture brightness to your preference.

###### • CONTRAST control

Turn to adjust the picture contrast to your preference.

##### ④ Input select switches

Press to select the video signals input to the rear connectors. (Selecting the signals)

(1) Set the switch on the upper side to VIDEO or Y/C position.

**VIDEO (■)** : When monitoring a composite video signal (via the INPUT A or INPUT B connector on the rear panel)

**Y/C (—)** : When monitoring Y/C separate video signals (via the Y/C INPUT connector on the rear panel)

(2) While setting the upper switch to "VIDEO", set the switch on the lower side to A or B position.

**A (■)** : When monitoring a signal via the INPUT A connector

**B (—)** : When monitoring a signal via the INPUT B connector

##### ⑤ System switch

Switches the colour system when a video signal is input.

**PAL (■)** : For PAL colour system

**SECAM (—)** : For SECAM colour system

##### ⑥ EXT SYNC switch

Switches the sync signal.

(■) : External sync (using sync signal input to the rear panel's INPUT B/EXT SYNC connector)

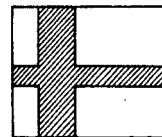
(—) : Internal sync

##### ⑦ PULSE CROSS switch

To check the retrace period (sync signal) by delaying the phase of the input signal.

**OFF (■)** : For normal picture

**ON (—)** : For retrace period check display



##### ⑧ COLOUR OFF switch

Switches picture between colour and monochrome for checking white balance, etc.

(■) : For a colour picture

(—) : For a monochrome picture

##### ⑨ UNDER SCAN switch

Press to switch the scanning size on the screen.

(■) : for overscanning

(—) : for underscanning

##### ⑩ BLUE CHECK switch

Switches the picture between normal and monochrome blue, for checking and adjusting the CHROMA.

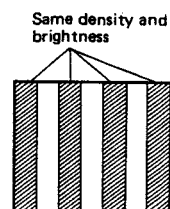
(■) : Normal picture

(—) : Monochrome blue picture

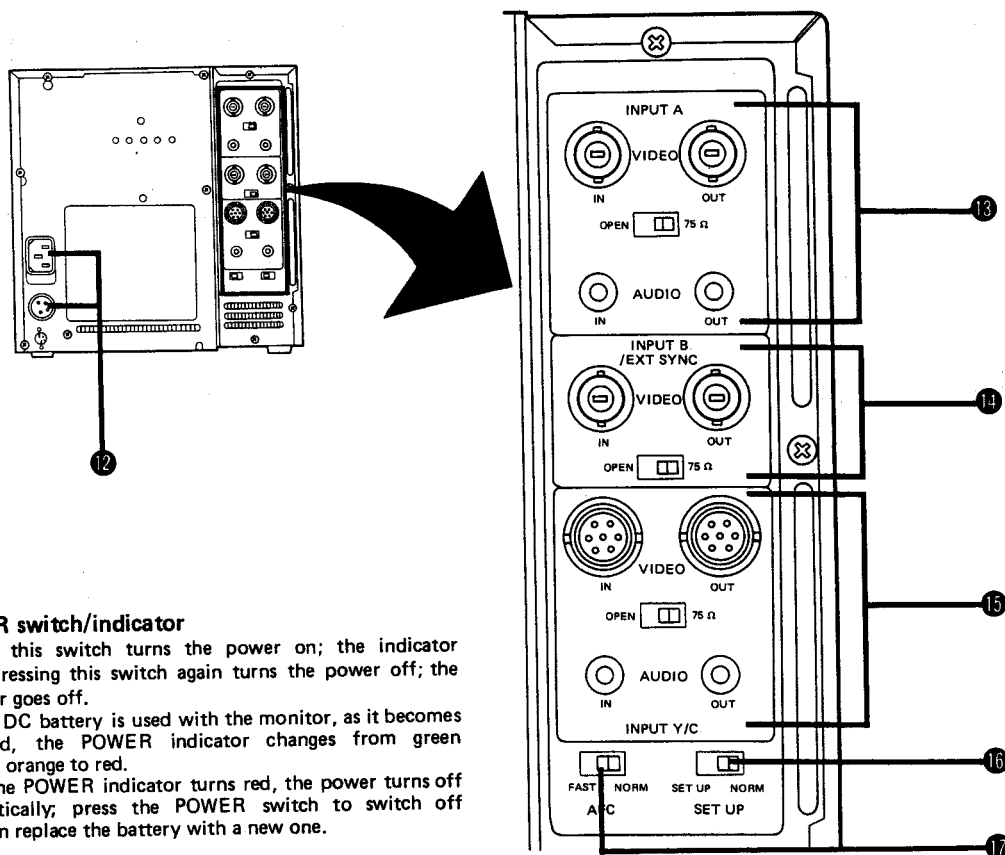
###### Adjusting procedure

(1) Input the colour bar signal to display a monochrome blue picture.

(2) Turn the CHROMA control so that all blue bars have the same density and brightness.





**(Rear Panel)****11 POWER switch/indicator**

Pressing this switch turns the power on; the indicator lights. Pressing this switch again turns the power off; the indicator goes off.

When a DC battery is used with the monitor, as it becomes exhausted, the POWER indicator changes from green through orange to red.

When the POWER indicator turns red, the power turns off automatically; press the POWER switch to switch off and then replace the battery with a new one.

**Rear Panel****12 Power input connectors**

Connect the AC IN connector to an AC outlet with the provided power cord. Connect the DC IN 12 V connector to a DC 12 V power source.

**13 INPUT A connectors/Termination switch**

Input connectors for composite video and audio signals and output connectors for bridge-connected signals.

**IN** : When inputting a signal

**OUT** : For bridged connection

**Setting the termination switch**

**75  $\Omega$**  : When there is only an input signal

**OPEN** : For bridged connection

**14 INPUT B/EXT SYNC connector/Termination switch**

Input connector for a composite video or sync signal. The IN and OUT connectors are bridge-connected.

**IN** : When inputting signals

**OUT** : For bridged connection

**Setting the termination switch**

**75  $\Omega$**  : When there are only input signals

**OPEN** : For bridged connection

**15 INPUT Y/C connectors/Termination switch**

Input connectors for Y/C separate video and audio signals and output connectors for bridge-connected signals.

**IN** : When inputting signals

**OUT** : For bridged connection

**Setting the termination switch**

**75  $\Omega$**  : When there are only input signals

**OPEN** : For bridged connection

**Caution:** These connectors can only be connected to the Y/C443 connectors of the VTR; they cannot be connected to the other dubbing connectors (DUB, Y/C629, Y/C633, and etc.)

**16 SET UP switch**

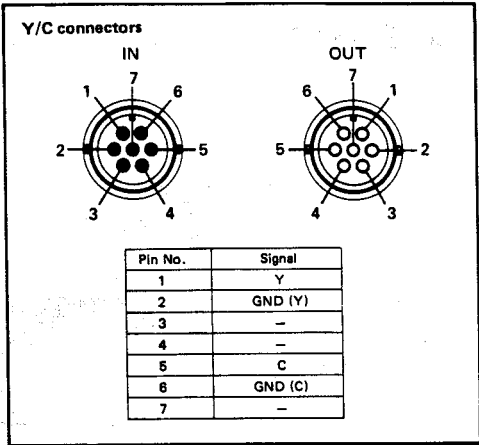
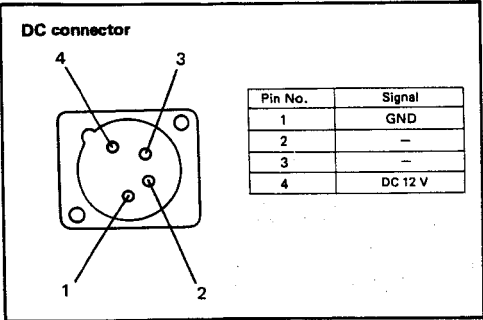
Do not reset this switch. It is for service personnel only.

**17 AFC switch**

Switches the AFC time constant of the horizontal sync circuitry to correct the skewed portion of the picture.

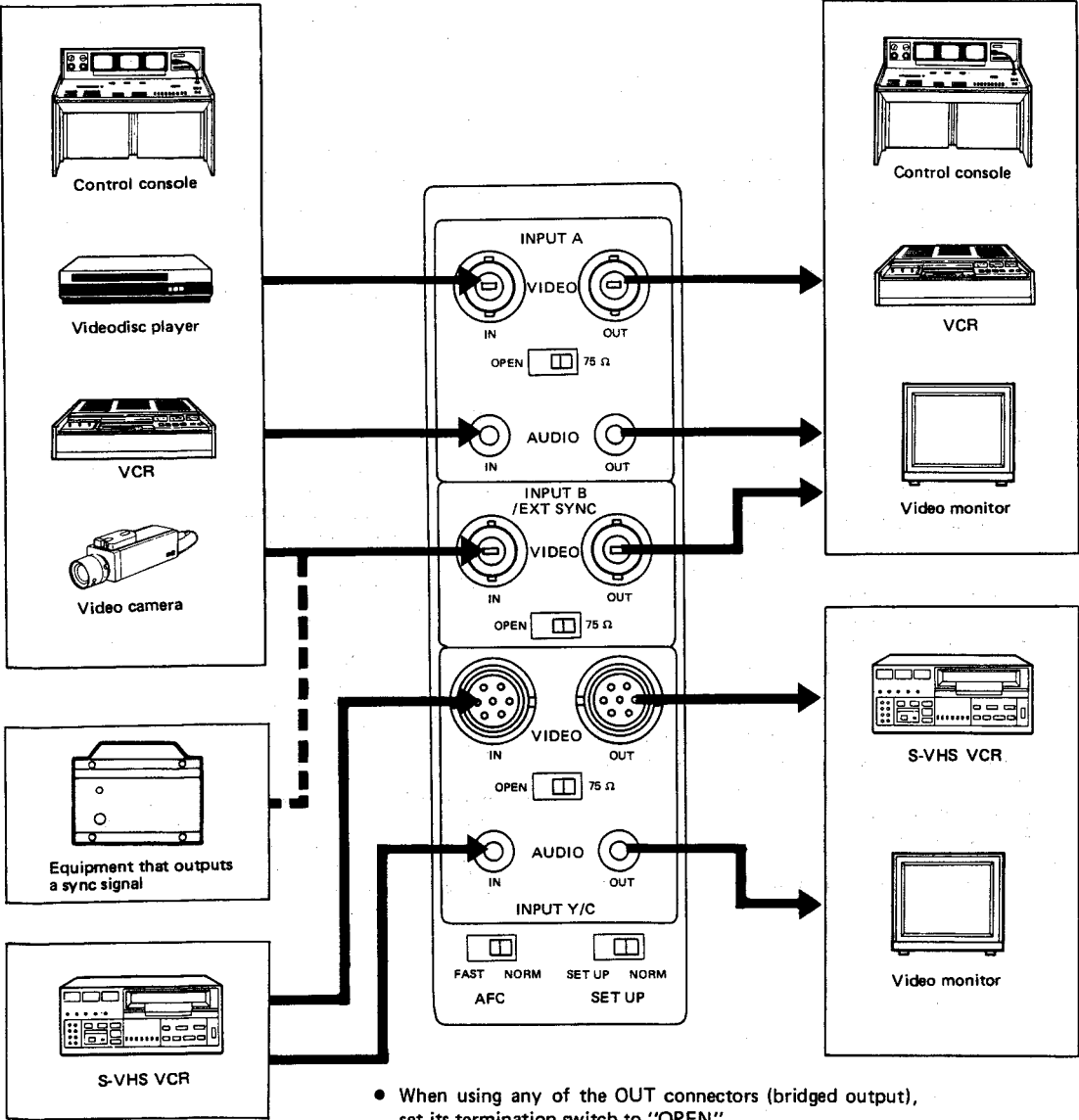
**FAST** : Fast mode (Smaller time constant)

**NORMAL** : Normal mode



CONNECTIONS

- Be sure to disconnect the power plug from the power source before connecting to other equipment.
- Also refer to the instruction manual of the equipment to be connected.



• When using any of the OUT connectors (bridged output), set its termination switch to "OPEN".

# SAFETY PRECAUTIONS

In order to prevent any fatal accidents caused by misoperation or mishandling of the monitor, be fully aware of all the following precautions.

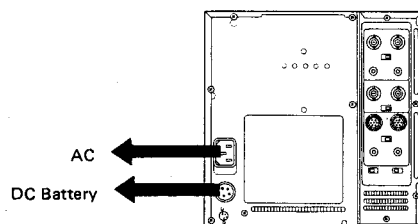
## WARNINGS

To prevent fire or shock hazard, do not expose this monitor to rain or moisture.  
Dangerous high voltages are present inside the unit. Do not remove the back cover of the cabinet.  
When servicing the monitor, contact qualified service personnel. Never try to service it yourself.

Improper operations, in particular alteration of high voltage or changing the type of tube may result in x-ray emission of considerable dose. A unit altered in such a way no longer meets the standards of certification, and must therefore no longer be operated.

The AC outlet should be located near to the monitor and easily accessible.

Connection diagram for power supply



Disconnection from power supply:

- 1) Pull out AC cable and
- 2) Disconnect battery plug.

## PRECAUTIONS

- Use only the power source specified on the rating label located on rear of the cabinet.
- When not using this unit for a long period of time, or when cleaning it, be sure to disconnect the power plug from the AC outlet.
- Do not allow anything to rest on the power cord. And do not locate this unit where people will tread on the cord.
- Do not overload wall outlets or power cords as this can result in a fire or electric shock.
- Avoid using this unit under the following conditions:
  - in extremely hot, cold or humid places,
  - in dusty places,
  - near appliances generating strong magnetic fields,
  - in places subject to direct sunlight, and
  - in badly ventilated places.
- Do not cover the ventilation slots while in operation as this could obstruct the required ventilation.
- When dust accumulates on the screen surface, clean with a soft cloth.
- Unplug this unit from the AC outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power cord is frayed or plug is damaged.
  - If liquid has been spilled into the unit.
  - If the unit does not operate normally following the operating instructions.
  - If the unit has been dropped or the cabinet has been damaged.
  - When the unit exhibits a distinct change in performance.
- Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Always refer servicing to qualified service personnel.
- When replacement parts are required, have the service personnel verify in writing that the replacement parts he uses have the same safety characteristics as the original parts. Use of manufacturer's specified replacement parts can prevent fire, shock, or other hazards.
- Upon completion of any servicing or repair to this unit, please ask the service personnel to perform the safety check described in the manufacturer's service literature.
- When this unit reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask qualified service personnel to dispose of this unit.

# SPECIFIC SERVICE INSTRUCTIONS

## DISASSEMBLY PROCEDURE

### 1. Removal of the TOP COVER

- (1) Remove the 2 screws (A) shown in Fig. 1.
- (2) Remove the 3 screws (B).
- (3) Slightly pull backward as shown by the arrow and remove the top cover.

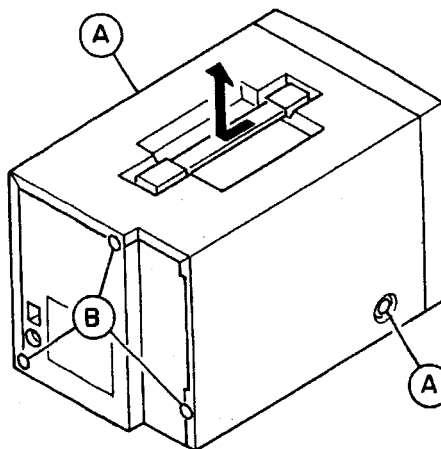


Fig. 1

### 2. Removal of the REAR COVER

- (1) Remove the top cover.
- (2) Remove the 2 screws (C) shown in Fig. 2.
- (3) Loosen the 3 screws (D).
- (4) Slightly slide the rear cover in the direction of the arrow and remove it.

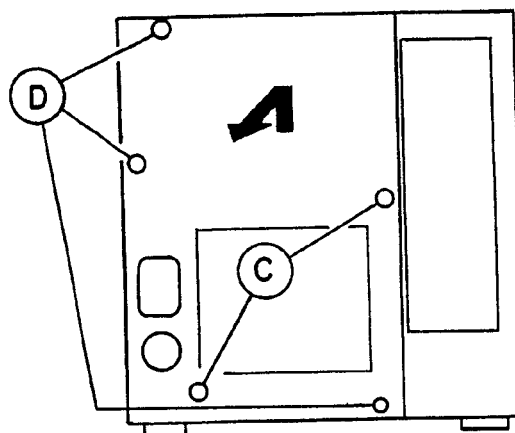


Fig. 2

### 3. Removal of the SIGNAL PC BOARD ASSEMBLY

- (1) Remove the 3 screws (E) shown in Fig. 3.
- (2) Open the signal PC board assembly towards yourself as shown by the arrow.
- (3) Grasp at the position of arrows (1) and pull in the direction of arrow (2) to remove the signal PC board assembly. (Removing the hinge connectors one by one facilitates the removal.)

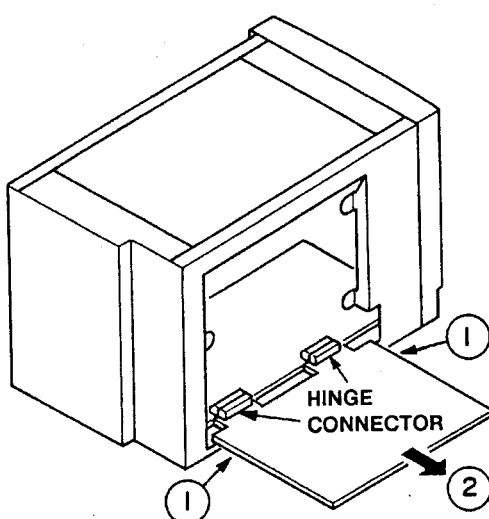


Fig. 4

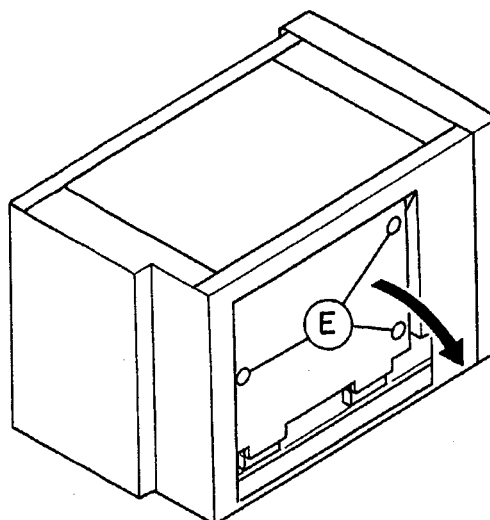


Fig. 3

#### 4. Checking the DEF. PC BOARD ASSEMBLY

- (1) Place the set on its side as shown in Fig. 5. At this time, in order not to cause scratches on the outer cover, place a cloth under the set.
- (2) Remove the 6 screws ⑥ and remove the bottom lid.

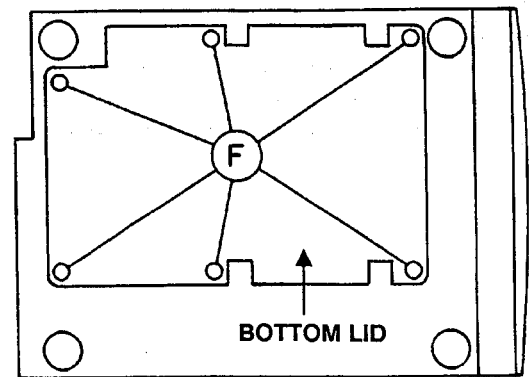


Fig. 5

#### 5. Removal of the DEF. PC BOARD ASSEMBLY

- (1) Remove the 3 screws ③ of Fig. 6 to remove the AV terminal.
- (2) Remove the screw ④ shown in Fig. 7.
- (3) Remove the CRT SOCKET PC BOARD, wires of the DEF. YOKE and the HVT and other wires as well.
- (4) Pull the DEF. PC BOARD ASSEMBLY toward you and remove it. (When replacing the DEF. PC BOARD ASSEMBLY to its original position, confirm that it is connected to the connector of the CONTROL PC BOARD ASSEMBLY.)

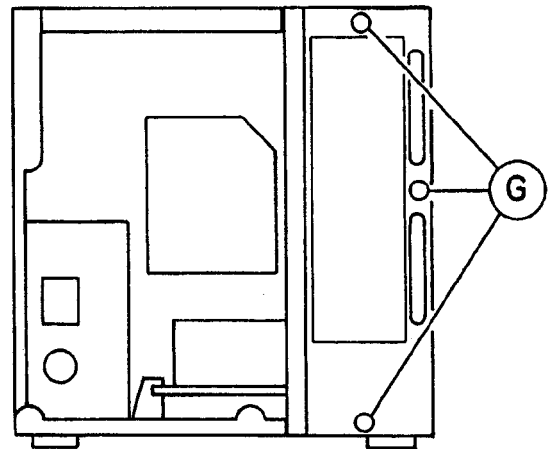


Fig. 6

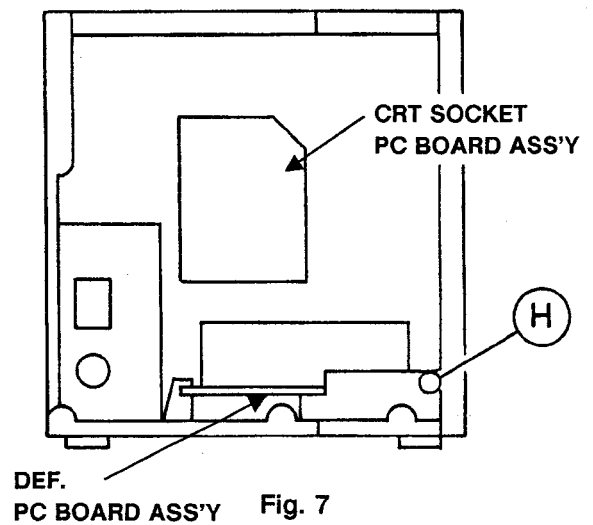


Fig. 7

## 6. Removal of the POWER SUPPLY ASSEMBLY

- (1) Remove the 2 screws ① shown in Fig. 8.
- (2) Slight lift up the AC input side of the POWER SUPPLY ASSEMBLY and slide it in the direction of the arrow to remove it.

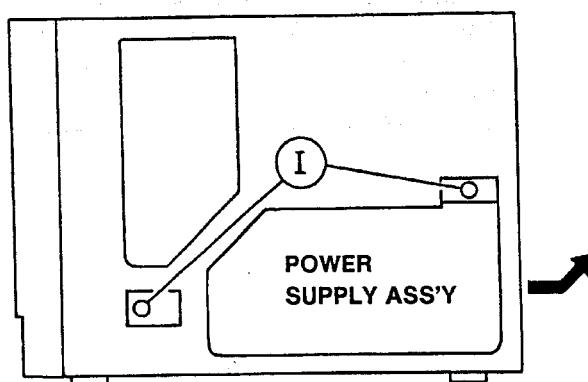


Fig. 8

## 7. Removal of the FRONT PANEL

- (1) Remove the 4 screws ② shown in Fig. 9.
- (2) Remove the front panel in the direction of the arrow.

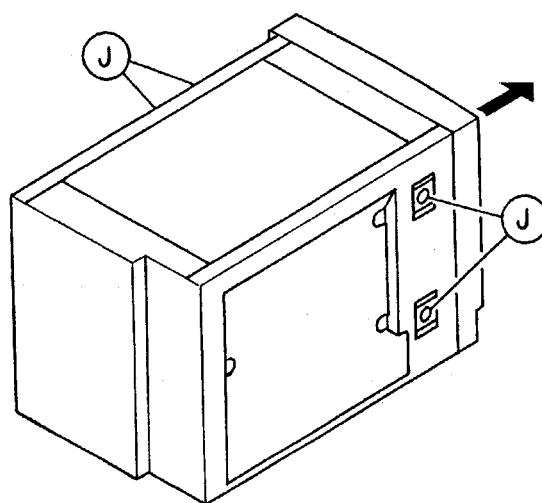


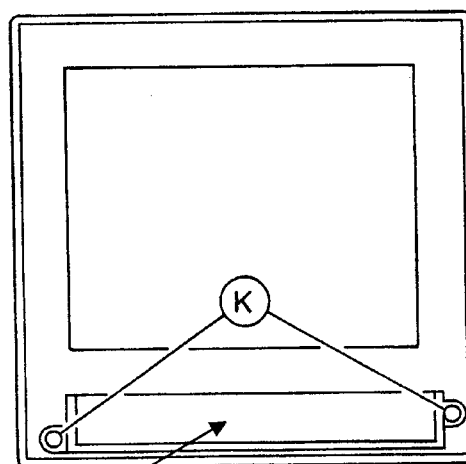
Fig. 9

## 8. Removal of the CRT

- (1) After removing the front panel, remove the 4 nuts attaching the CRT.

## 9. Removal of the CONTROL PC BOARD ASSEMBLY

- (1) After removing the front panel, remove the 2 screws ③ shown in Fig. 10.



CONTROL  
PC BOARD ASS'Y

Fig.10

## •WIRE CLAMPING AND CABLE TIES

Be sure to clamp the wire.  
Never remove the cable tie used for tying the wires together.  
Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

# SERVICE ADJUSTMENTS

## PRIOR TO STARTING ADJUSTMENT

- Perform sufficient warm-up of the TV set and testers.  
(for 30 minutes or more).
- Unless specified otherwise specially in [ADJUSTING STEP] given below, perform adjustment after setting the switches and VRs on the front panel to the following positions:

UNDER SCAN : OFF(OVER SCAN)  
 BLUE CHECK : OFF  
 PULSE CROSS : OFF  
 COLOUR OFF : OFF  
 SYSTEM SW : PAL  
 EXT SYNC : INT  
 Y/C : OFF(VIDEO)  
 A/B : VIDEO A  
 CONTRAST : CLICK position  
 BRIGHT : CLICK position

CHROMA : CLICK position  
 VOLUME : MIN. position

- Regarding the list of the layout of adjusted parts, refer to [ALIGNMENT LOCATION] in [SCHEMATIC DIAGRAM].

## TOOLS AND FIXTURES FOR ADJUSTMENT

- DC voltmeter or digital voltmeter
- Oscilloscope
- Pattern generator (PAL/SECAM)  
· The signal should be input to INPUT A(VIDEO).
- TV Color analyzer  
· Adjustment is possible without it. If available, however, further accurate adjustment is possible.
- Short jumper
- De-magnetizer
- DC power supply (12V 5A)

## ADJUSTING STEP

### POWER PC BOARD ASS'Y

Item	Measuring Instrument	Test point	Adjustment part	Description
Adjustment of B1 VOLTAGE (B1 POWER SUPPLY)	PATTERN GENERATOR  DC VOLTMETER or DIGITAL VOLTMETER	TP-91 (DEF. PC BOARD)  TP-E(⚡)	R919 (B1 ADJUSTMENT)	1. Input the black field pattern signal. 2. Adjust the B1 ADJUSTMENT VR (R919) so that the voltage between TP-91 (DEF. PC BOARD) and TP-E(⚡) becomes DC 30V. 3. Confirm that the B1 voltage scarcely changes even when the input signal has been changed.
Adjustment of BATTERY PROTECTOR CIRCUIT	PATTERN GENERATOR  DC VOLTMETER or DIGITAL VOLTMETER  DC POWER SUPPLY		R925 (BATTERY PROTECTOR VR)	1. Input the black field pattern signal. 2. Turn the BATTERY PROTECTOR VR (R925) as far as possible to the right. 3. Apply 12V DC to the DC 12V terminal of the set. 4. Set the power switch of the set to ON and confirm that the black field pattern appears (the power indicator lights in green). 5. Set the DC input voltage for the set to 10.5V $\pm$ 0.1V DC. 6. Slowly turn the BATTERY PROTECTOR VR (R925) to the left side, and stop turning when the power indicator has turned from green through orange to red. At this time, the operation of the set will stop. 7. Set the power switch of the set to OFF. (The protection circuit will be set.) 8. Set the DC input voltage of the set to the regular voltage of 12V. 9. Set the power switch of the set to ON again. 10. Confirm that the operation of the set is normal. 11. Gradually lower the DC input voltage of the set from 12V, and when it becomes 10.5V $\pm$ 0.2V, confirm that the power indicator lights in red.

(B CONNECTOR)

R919

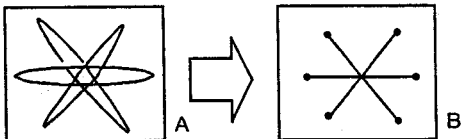
R925

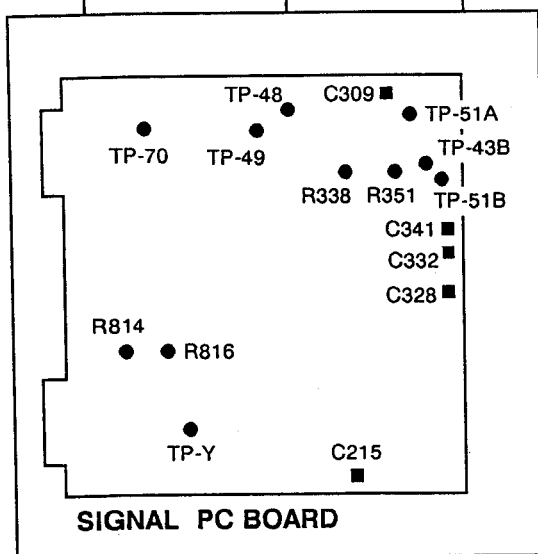
**POWER PC BOARD**

TP-91

**DEF. PC BOARD**

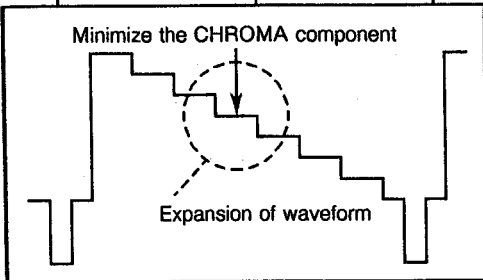
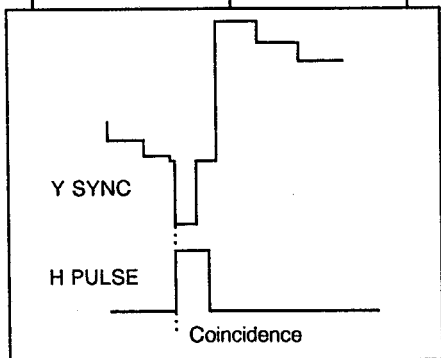
## SIGNAL PC BOARD ASS'Y

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of COLOR SYNCHRONISM	PATTERN GENERATOR  OSCILLOSCOPE  SHORT JUMPER	TP-51A TP-51B TP-43B TP-E(⌋)	C309	<ol style="list-style-type: none"> <li>1. Turn the SYSTEM SW to PAL.</li> <li>2. Input the PAL color bar signal.</li> <li>3. Connect TP-51A and TP-51B with a short jumper.</li> <li>4. Connect TP-43B and TP-E (⌋) with a short jumper.</li> <li>5. Adjust the COLOR SYNC. (C309) to a position where the color changes from a striped pattern to a color bar and remains at a standstill.</li> <li>6. Remove the connected short jumper.</li> <li>7. Make sure that the color synchronism is not collapsed and instantaneously led in when returned to the color bar signal again after changing the input select switch.</li> </ol>
Adjustment of PAL CHROMA	PATTERN GENERATOR  OSCILLOSCOPE	TP-48 TP-49	R338 (DL LEVEL)  C332 C341 C328 C309	<ol style="list-style-type: none"> <li>1. Turn the SYSTEM SW to PAL.</li> <li>2. Input the PAL color bar signal.</li> <li>3. Connect the oscilloscope to TP-48 and TP-49, and plot the X-Y coordinates.</li> <li>4. Adjust with DL LEVEL VR (R338) and C332 C341 so that the waveforms are the shapes shown from A to B in the chart below.</li> </ol> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> <li>5. When it is not possible to adjust with the R338 C332 C341, adjust with C328.</li> <li>6. Input the half color bar.</li> <li>7. Adjust with C309 so that the color at the center section under the color bar is at minimum.</li> </ol>

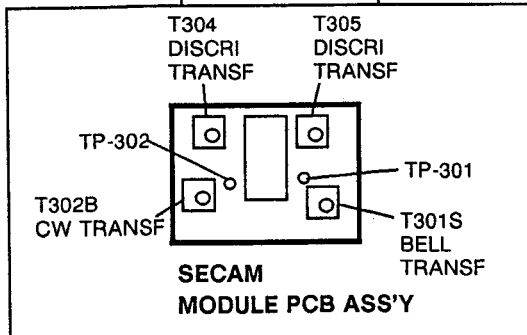
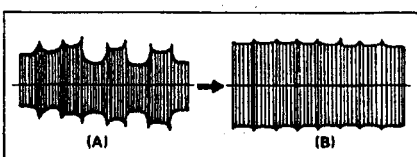




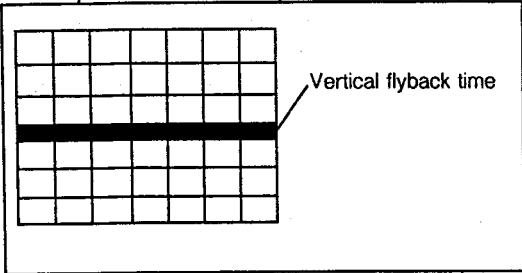
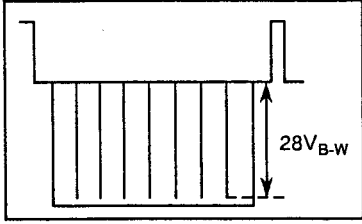
## SIGNAL PC BOARD ASS'Y

Item	Measuring Instrument	Test point	Adjustment part	Description
Adjustment of NOCTH CIRCUIT	PATTERN GENERATOR  OSCILLOSCOPE	TP-Y	C215	<ol style="list-style-type: none"> <li>1. Turn the SYSTEM SW to SECAM.</li> <li>2. Input the SECAM color bar signal.</li> <li>3. Connect the oscilloscope between TP-Y and TP-E. In case the waveform can be expanded by the oscilloscope, expand the waveform to allow easy adjustment.</li> <li>4. Adjust the C215 so that the CHROMA component becomes minimum.</li> </ol>
				
Adjustment of H PULSE	PATTERN GENERATOR  OSCILLOSCOPE	TP-Y TP-70	R814 R816(P/C)	<ol style="list-style-type: none"> <li>1. Turn the SYSTEM SW to PAL.</li> <li>2. Input the PAL color bar signal.</li> <li>3. Connect the oscilloscope to TP-Y and TP-70 Pin, set to the dual-trace and increase the SYNC section.</li> <li>4. Adjust with R814 so that the SYNC forward line of the Y signal and the start of the H PULSE coincide.</li> <li>5. Confirm that the waveform phase dose not slip even when the pulse cross SW is pressed.</li> <li>6. If the phase slips,use R816 to adjust so that the H PULSE dose not come to the left side (leading phase) of the SYNC of Y signal.</li> </ol>
				

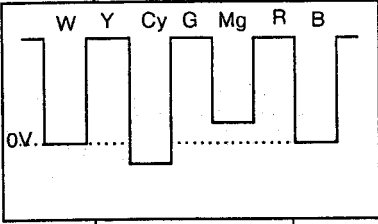
## SECAM MODULE CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SECAM CHROMA	PATTERN GENERATOR  OSCILLOSCOPE  DC VOLTMETER	TP-301 TP-302	T301S (BELL TRANSF.)  T302B (CW TRANSF.)  T304 T305 (DISCRI TRANSF.)	<ol style="list-style-type: none"> <li>1. Turn the SYSTEM SW to SECAM.</li> <li>2. Input the SECAM color bar signal.</li> <li>3. Connect an oscilloscope to pin ⑩ (or TP-301) of IC301.</li> <li>4. Adjust the BELL TRANSF. (T301S) for flat waveform as altered to figure (B) from (A).</li> </ol>
				
				
<ol style="list-style-type: none"> <li>5. Connect a voltmeter to pin ⑩ (or TP-302) of IC301.</li> <li>6. Adjust CW TRANSF. (T302B) for minimum DC voltage.</li> <li>7. Adjust the DISCRI TRANSF. (T304 &amp; T305) until colors are eliminated from the black-and-white (or white) sections of colour bars on the screen.</li> </ol>				

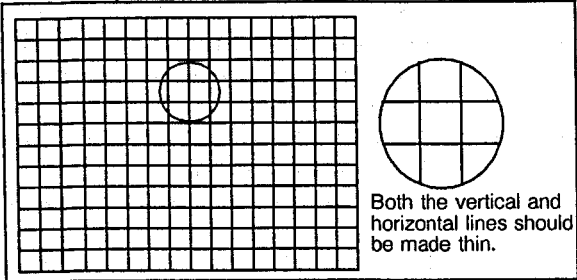
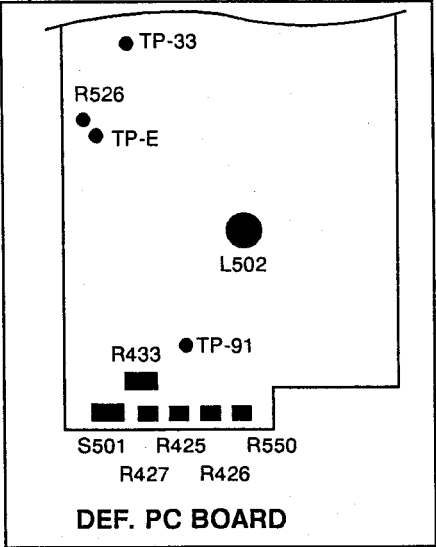
## CONTROL PC BOARD ASS'Y

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	PATTERN GENERATOR		R109 (SUB BRIGHT)	<ul style="list-style-type: none"> <li>Continue running for 30 minutes or more.</li> <li>Set the CONTRAST and BRIGHT VRs on the front panel to the clicking position.</li> </ul> <ol style="list-style-type: none"> <li>Input the cross hatch signal.</li> <li>Turn the V. HOLD VR to display the vertical flyback time and let it remain at a standstill.</li> <li>Adjust the SUB BRIGHT VR (R109) in front of the position where the vertical flyback time becomes black (In this case, be careful so that it will not become too bright).</li> <li>Adjust the vertical synchronism with the V. HOLD VR.</li> </ol>
				
Adjustment of SUB CONTRAST	PATTERN GENERATOR  OSCILLOSCOPE	TP-47B TP-E	R103 (SUB CONT.)	<ul style="list-style-type: none"> <li>Set the CONTRAST and BRIGHT VRs on the front panel to the clicking position.</li> </ul> <ol style="list-style-type: none"> <li>Input the cross hatch signal.</li> <li>Connect the oscilloscope between TP-47B and TP-E on the CRT SOCKET PCB.</li> <li>Adjust the SUB CONT. VR (R103) so that the voltage of the waveform becomes <math>28V_{B-W}</math>.</li> </ol>
				

## CONTROL PC BOARD ASS'Y &amp; SIGNAL PC BOARD ASS'Y

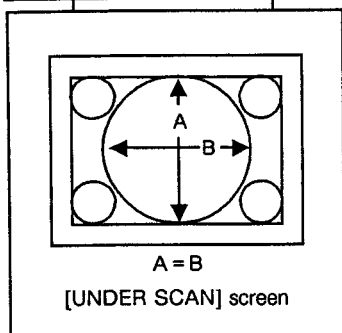
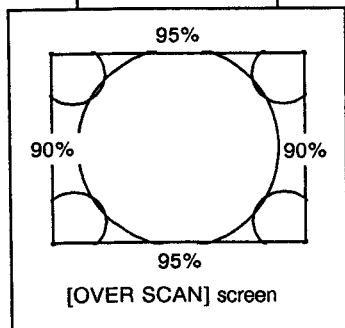
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB CHROMA	PATTERN GENERATOR  OSCILLOSCOPE	TP-47B TP-E	CONTROL PC BOARD ASS'Y R121 (SUB CHROMA)  SIGNAL PC BOARD ASS'Y R351 (PAL SUB CHROMA)	<ul style="list-style-type: none"> <li>Turn the CHROMA VR on the front panel to the click position.</li> </ul> <ol style="list-style-type: none"> <li>Turn the SYSTEM SW to SECAM.</li> <li>Input the SECAM color bar signal.</li> <li>Connect TP-47B of the CRT SOCKET PCB to the oscilloscope.</li> <li>Turn SUB CHROMA (R121) to adjust the white and blue levels.</li> <li>Return the SYSTEM SW to PAL.</li> <li>Input the PAL color bar signal.</li> <li>Turn PAL SUB CHROMA (R351) to set the difference of white and blue to 0V.</li> </ol>
				

## DEF. PC BOARD ASS'Y

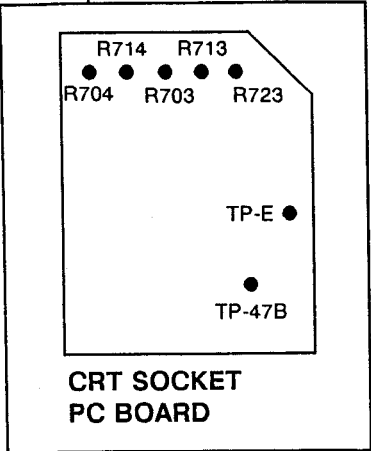
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	PATTERN GENERATOR		FOCUS VR	<ol style="list-style-type: none"> <li>1. Input the cross hatch signal.</li> <li>2. Adjust the FOCUS VR to a position where the vertical and horizontal lines of cross hatch become thinnest and clearest.</li> </ol> <p>Note: Be sure to perform final adjustment of the convergence after adjustment of focus, since the convergence will be changed whenever the focus has been adjusted.</p>
				
Adjustment of HORIZONTAL HOLD	PATTERN GENERATOR  SHORT JUMPER	TP-33A TP-E	R526 (H HOLD)	<ul style="list-style-type: none"> <li>• Set the CONTRAST VR on the front panel to the clicking position.</li> </ul> <ol style="list-style-type: none"> <li>1. Input the color bar signal.</li> <li>2. Connect TP-33A and TP-E with a short jumper.</li> <li>3. Adjust the H. HOLD VR (R526) to a position where the image remains at a standstill without flowing horizontally. <ul style="list-style-type: none"> <li>• Namely, adjust the VR to an intermediate position where the image flows horizontally.</li> </ul> </li> <li>4. Remove the connected short jumper.</li> <li>5. Make sure that the color synchronism is not collapsed and normal image appears instantaneously when returned to the color bar signal again after changing the input select switch.</li> </ol>
				

## DEF. PC BOARD ASS'Y

Item	Measuring Instrument	Test point	Adjustment part	Description
Adjustment of H. WIDTH and H. CENTER	PATTERN GENERATOR		L502(H. WIDTH COIL)  S501 (H CENTER)  R550 (H POSITION)	<ol style="list-style-type: none"> <li>1. Input the monoscope signal or cross hatch signal.</li> <li>2. Select the OVER SCAN screen with the UNDER SCAN switch on the front panel.</li> <li>3. With the H. WIDTH COIL (L502) and H. CENTER switch (S501), perform adjustment so that 90% of monoscope pattern (cross hatch) is displayed on the screen.</li> <li>4. Select the UNDER SCAN screen with the UNDER SCAN switch on the front panel.</li> <li>5. In case the image is chipped off from the raster, adjust the H. POSITION VR (R550).</li> <li>6. Select the OVER SCAN screen with the UNDER SCAN switch on the front panel.</li> </ol>
Adjustment of V. HEIGHT V. CENTER and V. LINEARITY	PATTERN GENERATOR		R425(V.HEIGHT NORMAL)  R433(V.CENTER)  R427(V.LIN.)  R426(V.HEIGHT UNDER)	<ol style="list-style-type: none"> <li>1. Input the monoscope signal or cross hatch signal.</li> <li>2. Select the OVER SCAN screen with the UNDER SCAN switch on the front panel.</li> <li>3. Roughly adjust the V. HEIGHT NORMAL VR (R425) so that nearly all the monoscope pattern (cross hatch) is displayed on the screen.</li> <li>4. With the V. HEIGHT NORMAL VR (R425) and V. CENTER VR (R433), perform adjustment so that 95% of the monoscope pattern (cross hatch) is displayed on the screen.</li> <li>5. While turning the V. LIN. VR (R427), adjust the vertical linearity.</li> <li>6. Repeat the Steps 3 - 5 as required.</li> <li>7. Select the UNDER SCAN screen with the UNDER SCAN switch on the front panel.</li> <li>8. Adjust the V. HEIGHT UNDER VR (R426) so that the vertical amplitude becomes <math>A=B</math> (making the vertical and horizontal diameter the same).</li> <li>9. Perform fine adjustment of the center and vertical linearity so that displacement of adjustment will not occur even if the SCAN switch on the front panel has been changed over.</li> <li>10. Select the OVER SCAN screen with the UNDER SCAN switch on the front panel.</li> </ol>

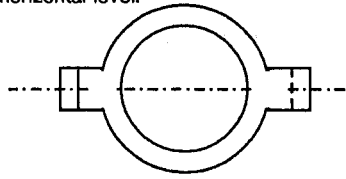
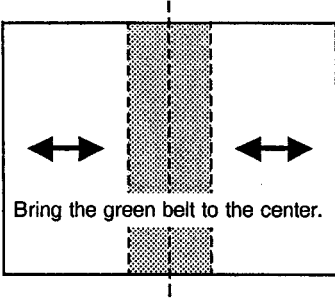
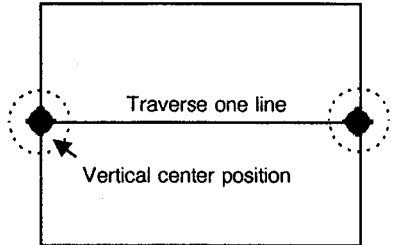


## CRT SOCKET PC BOARD ASS'Y

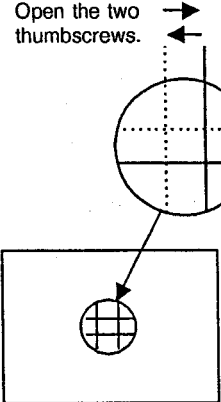
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (CUTOFF)	PATTERN GENERATOR		R703 (R CUTOFF)  R713 (G CUTOFF)  R723 (B CUTOFF)  SCREEN VR	<ul style="list-style-type: none"> <li>Continue running for 10 minutes or more.</li> </ul> <ol style="list-style-type: none"> <li>Input the black field pattern signal.</li> <li>Turn the transverse one line SET UP switch (S204) on the rear surface over to the SET UP side.</li> <li>Turn the CUT OFF VRs (R703, R713 and R723) on the CRT SOCKET PCB fully in counterclockwise direction.</li> <li>While turning the SCREEN VR gradually in clockwise direction from full counterclockwise direction, search for the color appearing for the first time.</li> <li>Turn the CUT OFF VRs, with which the color has appeared first in the Step 4, slightly in clockwise direction.</li> <li>By turning the CUT OFF VRs for the other two colors in clockwise direction, adjust the intensity of the three shining colors so that the transverse single line look white.</li> <li>Return the transverse single line SET UP switch (S204) to the NORMAL side.</li> </ol>
 <p style="text-align: center;">CRT SOCKET PC BOARD</p>				
Adjustment of WHITE BALANCE (DRIVE)	PATTERN GENERATOR		R704 (R DRIVE)  R714 (G DRIVE)	<ul style="list-style-type: none"> <li>Continue running for 30 minutes or more.</li> <li>This adjustment should be performed after <b>Adjustment of WHITE BALANCE (CUTOFF)</b>.</li> </ul> <ol style="list-style-type: none"> <li>Input the white field pattern signal.</li> <li>Adjust the R and G DRIVE VRs (R704 and R714) on the CRT SOCKET PCB to a position where the entire screen becomes white.</li> <li>While turning the CONTRAST VR and BRIGHT VR on the front panel, make sure that the white balance is attained.</li> </ol> <p><b>[In case monoscope signal and TV Color analyzer are available]</b></p> <ol style="list-style-type: none"> <li>Input the monoscope signal.</li> <li>The light receiving unit of the TV Color analyzer will measure the color temperature at the center of the screen.</li> <li>Adjust the CONTRAST VR, R and G DRIVE VRs (R704 and R714) on the CRT SOCKET PCB to a position where the TV Color analyzer indicates a specified value.</li> </ol> <ul style="list-style-type: none"> <li><b>Color temperature</b> : D6500°K (x=0.313, y=0.329)</li> </ul> <ol style="list-style-type: none"> <li>While turning the CONTRAST VR and BRIGHT VR on the front panel, make sure that the white balance is attained.</li> </ol>

## ADJUSTING STEP OF COLOR TONE

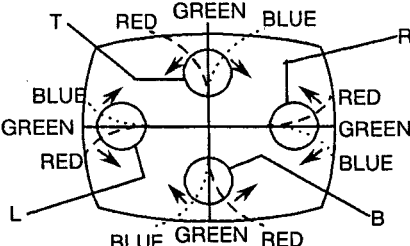
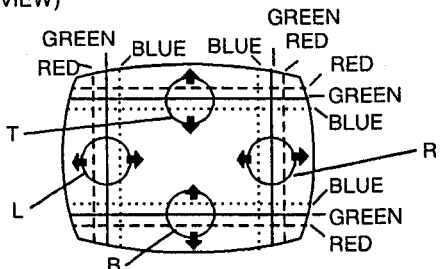
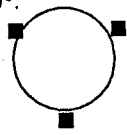
### ADJUSTMENT OF PURITY

Adjustment Part	Description	Remarks
<b>WEDGE</b>  <b>PURITY MAGNET</b>  <b>G CUTOFF VR</b>  <b>R CUTOFF VR</b>  <b>B CUTOFF VR</b>  <b>SCREEN VR</b>  <b>DEFLECTING YOKE</b>  <b>Traverse one line SET UP switch</b>	<p><b>PRIOR TO STARTING ADJUSTMENT:</b></p> <ol style="list-style-type: none"> <li>1. Remove the wedge being inserted in between the deflecting yoke. At this time, clear the trace of the wedge.</li> <li>2. Peel of the adhesive attaching the six magnets and magnet lock.</li> <li>3. Turn the magnet lock to the left so that the 6 magnets rotates.</li> <li>4. Input the white field pattern signal.</li> <li>5. Perform magnetic erasing of the CRT with a demagnetizer.</li> <li>6. Set the brightness and contrast to slightly higher levels, and perform warm-up roughly for 20 - 30 minutes.</li> </ol> <p><b>ADJUSTING STEP</b></p> <ol style="list-style-type: none"> <li>1. By turning the G CUTOFF VR on the CRT SOCKET PC BOARD fully in clockwise direction and the R and B CUTOFF VR fully in counterclockwise direction, adjust the SCREEN VR to make the green screen visible.</li> <li>2. After loosening the clamp screw of the deflecting yoke, pull the yoke fully backward, and let color shading appear in a vertical belt form.</li> <li>3. Pile up the clicks of the two purity magnets alternately each other, and set them to a horizontal position as an initial.</li> <li>4. While opening and closing or turning the clicks of the two purity magnets, perform adjustment so that the green vertical belt appears at the center of the screen.</li> <li>5. By pushing out the deflecting yoke to the front side, position the yoke so that the entire screen becomes totally green (In this case, tentatively fix the deflecting yoke with a wedge so that the yoke is not moved).</li> <li>6. Set the traverse one line SET UP switch to the SET UP side to display traverse one line on the screen. With the deflecting yoke, make the traverse one line horizontal and further close to the vertical center (Do not change the cross position of the deflecting yoke)</li> <li>7. Return the transverse single line SET UP switch to the NORMAL side.</li> <li>8. Confirm that the purity has been attained with regard to the red, blue and monicolor rasters.</li> </ol>	<p>Align the two purity magnets to a horizontal level.</p>  <p>Bring the green belt to the center.</p>  <p>Traverse one line</p> 

## ADJUSTMENT OF STATIC CONVERGENCE

Adjustment Part	Description	Remarks
CONVERGENCE MAGNET	<b>ADJUSTING STEP</b> <ol style="list-style-type: none"> <li>1. Input the cross hatch signal.</li> <li>2. Overlap the red and blue lines at the center of the screen with 4-pole magnet to turn the color to Magenta color (red/blue).</li> <li>3. Next, overlap the Magenta color (red/blue) and green lines at the center of the screen with 6-pole magnet.</li> <li>4. Repeat the Steps 2 and 3, and adjust the convergence of the vertical and horizontal lines at the center of the screen.</li> </ol>	

## ADJUSTMENT OF DYNAMIC CONVERGENCE

Adjustment Part	Description	Remarks
	<b>ADJUSTING STEP</b> <ol style="list-style-type: none"> <li>1. Remove the wedge with which the deflecting yoke was temporarily fixed.</li> <li>2. Oscillating the deflecting yoke up and down, set a convergence of points, L, R, T and B, on the screen and temporarily fix it with a wedge.</li> <li>3. Maintaining that situation, oscillate the deflecting yoke right and left and set the convergence of points, L, R, T and B, on the screen.</li> <li>4. Repeating 2 and 3, fix the position of the deflecting yoke with three wedges so as to produce the best condition for the convergence of points L, R, T and B, on the screen.</li> </ol>	<p>(FRONT VIEW)</p>  <p>Tilting the yoke upward will move the lines as shown with the arrows.</p> <p>(FRONT VIEW)</p>  <p>Tilting the yoke to the right will move the lines as shown with the arrows.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>The wedges should be fixed at three positions at an interval of about 120°.</p>  </div>

## AFTER COMPLETION OF PURITY-CONVERGENCE ADJUSTMENT

Adjustment Part	Description	Remarks
	<ol style="list-style-type: none"><li>1. Fasten the clamp screw of the deflecting yoke tightly.</li><li>2. Coat the six magnets and magnet lock with lerchlock. Lerchlock Type name <b>No. 3-C</b> NET 200g (Manufacturer-Raihiden Kagaku Kabushikigaisha)</li><li>3. Coat silicon on the three wedges. Silicon Type name <b>KE4866</b> NET 100g (Shinetsu Kagaku)</li></ol>	



# PARTS LIST

## CAUTION

- The parts marked  $\triangle$  are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
- The module circuit board is supplied together with the assembly, but the parts which do not have the drawing in this Parts List, P. C. Board Ass'y and the Parts No. columns of which are filled with lines — . will not be supplied.
- As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board.  
When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to (NOTE 2).

### ( NOTE 1 ) ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
$\pm 1\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 30\%$	+ 30% - 10%	+ 50% - 10%	+ 80% - 20%	+ 100% - 0%

( NOTE 2 )    HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR

Q

R

—

Kind

Rated Power

Shape

Tolerance

Resistance

Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by  $\Omega$  and following 0.  
please note that,in case of resistance less than 10  $\Omega$ , a letter "R" will be effective as point.

EX.

$2.2 \Omega = 2R2$   
 $470 \Omega = 47 \times 10^1 \rightarrow 471$   
 $150k\Omega = 15 \times 10^4 \rightarrow 154$

■ CAPACITOR

Q

—

Kind

Shape

Rated Voltage

Tolerance

Capacitance

Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

	5Figure	0	1	2
6Figure				
A			10V	100V
C			16V	160V
D				200V
E			25V	250V
H			50V	500V
J		6.3V	63V	
V			35V	

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

Indicate with first two-figure expressed by pF and following 0.  
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

$5pF = 5R0$   
 $1000pF = 10 \times 10^2 \rightarrow 102$   
 $47\mu F = 47 \times 10^6 \rightarrow 476$

## MAIN PARTS LIST

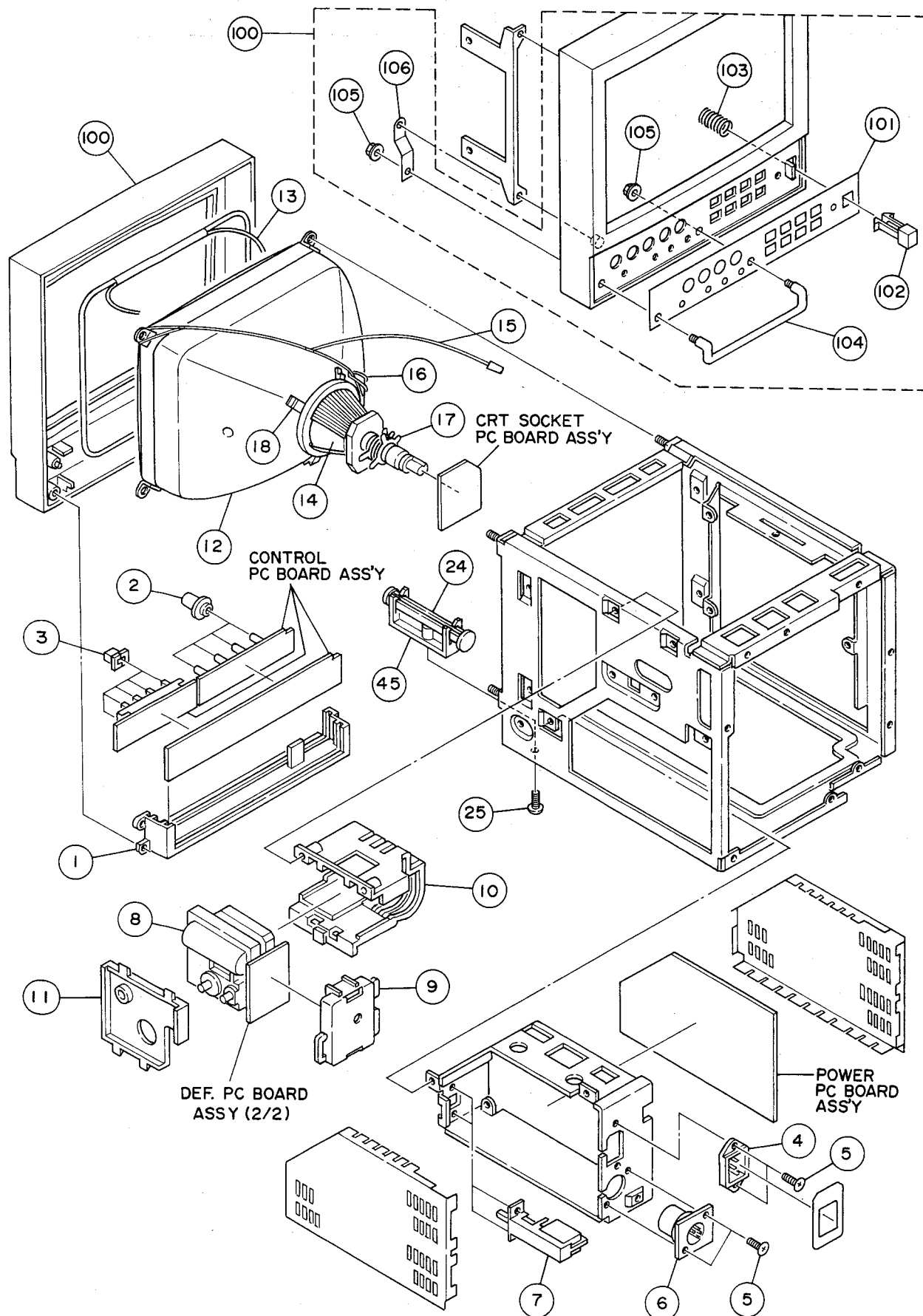
SYMBOL NO.	△	PART NO.	PART NAME	REMARKS
CRT & TUNER				
	△	CE40266-00A	P. C. MAGNET	
	△	CJ27569-00A	DEF YOKE ASSY	
	△	CELD023-001	DEG COIL	
	△	A22JCM00X-AQ	PICTURE TUBE	
VARIABLE R				
R1338		QVPC611-202HZ	V R (DL LEVEL)	2 kΩ
R1351		QVPC611-203HZ	V R (PAL SUB CHROMA)	20 kΩ
R1814		QVPC611-104HZ	V R (NORMAL FF PULSE PHASE)	100 kΩ
R1816		QVPC611-104HZ	V R (P/C FF PULSE PHASE)	100 kΩ
R2425		QVPE605-501H	TRIM. RESISTOR	(V. HEIGHT NORMAL)
R2426		QVPE605-102H	TRIM. RESISTOR	(V. HEIGHT UNDER)
R2427		QVPE605-501H	TRIM. RESISTOR	(V. LIN.)
R2433		QVPCA02-501H	V R (V. CENTER)	500 Ω
R2526		QVPC611-502HZ	V R (H. HOLD)	5 kΩ
R2550		QVPE605-103H	TRIM. RESISTOR	(H. POSITION)
R3703		QVPE805-103H	V R (R CUTOFF)	10 kΩ
R3704		QVPE805-201H	V R (R DRIVE)	200 Ω
R3713		QVPE805-103H	V R (G CUTOFF)	10 kΩ
R3714		QVPE805-201H	V R (G DRIVE)	200 Ω
R3723		QVPE805-103H	V R (B CUTOFF)	10 kΩ
R4101		QVAZ006-C010A	V R (CONT. BRIGHT CHROMA VOLUME)	
R4103		QVPC611-103HZ	V R (SUB CONTRAST)	10 kΩ
R4109		QVPC611-202HZ	V R (SUB BRIGHT)	2 kΩ
R4120		QVPC611-502HZ	V R (V. HOLD)	5 kΩ
R4121		QVPC611-103HZ	V R (SUB CHROMA)	10 kΩ
R9919		QVPC611-501HZ	V R (B1 ADJ)	500 Ω
R9925		QVPC611-203HZ	V R (BATTERY PROTECTOR)	20 kΩ
FUSIBLE R				
R2778	△	QRZ0054-4R7M	F R	
R9935	△	QRZ0054-150M	F R	15 Ω
TRANSFORMER				
T9901	△	CE41929-00A	FLYBACK TRANSF	
	△	CE41915-00B	SWITCHING TRANSF	
DIODE				
D1211		MA4082 (L) -T2	ZENER DIODE	
D2502		DFA1A4-4	SI. DIODE	
D2509		MA4200 (M) -T2	ZENER DIODE	
D2771	△	HZ7B2L-C1	ZENER DIODE	
D4104		SML1216W	L E D 2 (G+R)	
D9901	△	LB-156-LFB	DIODE BRIDGE	
D9905		FML-G12S	SI DIODE	
D9906		RD6. 2ES (B3) -T2	ZENER DIODE	
D9907		ESAB82M-004	S B DIODE	
D9909		RD5. 6ES (B3) -T2	ZENER DIODE	
TRANSISTOR				
Q2508	△	2SC2749 (N-K)	SI. TRANSISTOR	
Q3701		2SC2611	SI. TRANSISTOR	
Q3702		2SC2611	SI. TRANSISTOR	
Q3703		2SC2611	SI. TRANSISTOR	
IC				
IC1201		AN5615	I. C.	
IC1202		TC4066BP	I. C. (M)	
IC1301		AN5625N	I. C.	
IC1801		TC4066BP	I. C. (M)	
IC1802		TC4538BP	I. C. (M)	
IC1803		TC4538BP	I. C. (M)	
IC2401	△	AN5515	I. C. (M)	

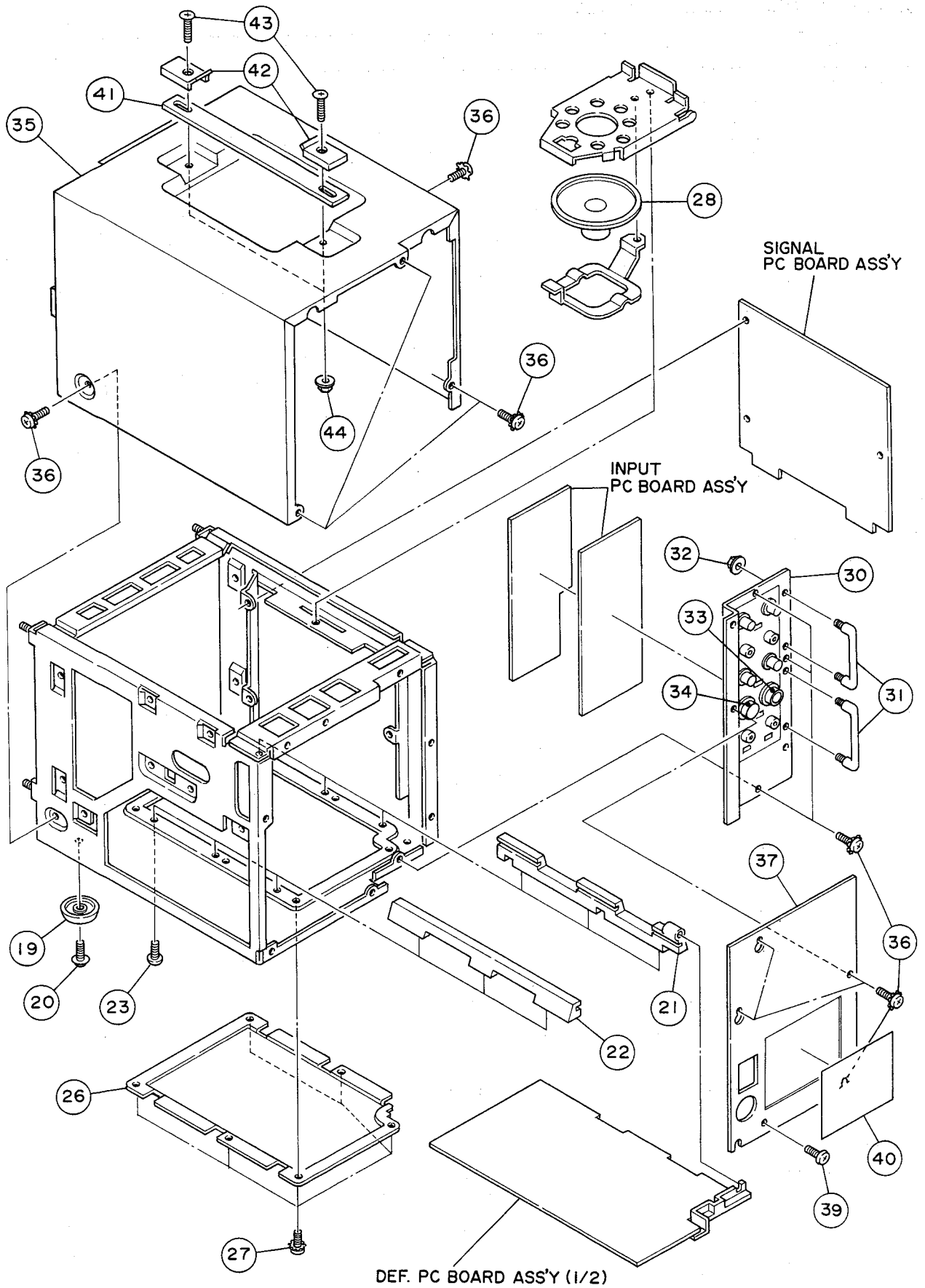
SYMBOL NO.	△	PART NO.	PART NAME	REMARKS
IC				
IC2402		TC4538BP	I. C. (M)	
IC2501	△	HA11423	I. C.	
IC2502		TC4538BP	I. C. (M)	
IC2503		TC4066BP	I. C. (M)	
IC2505		TA78012AP	I. C. (M)	
IC2601		AN5265	I. C. (M)	
IC6201		LA7016	I. C.	
IC6601		TC4066BP	I. C. (M)	
IC9901	△	STR10006-A	I. C. (H)	
IC9902		AN5900	I. C. (M)	
IC9903		UPC4558C	I. C.	
IC9904		TA78012AP	I. C. (M)	
FUSE				
F9901	△	QMF51E2-2R5S	FUSE	2. 5A
F9902	△	QMF51E2-4R0S	FUSE	4A
OTHERS				
		CM22138-A0A	INPUT PANEL ASSY	
		CM11826-A01	TOP COVER	
		QZF2207-001	FOOT	×4
		CM11827-A0A	FRONT PANEL ASSY	
	△	QMCB005-001	3P INLET	
	△	CEMR004-001	4P CONNECTOR	
		SBX-S005A	SECAM MODULE	
	△	QMP4718-200R	POWER CORD	
DL1201		CE41679-001	DELAY LINE	
DL1302		CE41042-002	DELAY LINE	
DL1303		CE41489-001	1H DELAY LINE	
LF9901	△	CE41094-00B	LINE FILTER	
LF9902	△	CE41094-00B	LINE FILTER	
RY2501	△	CESK006-001	RELAY	
RY9901	△	CESK006-002	RELAY	
	△	HSA0899-01D	CONE SPEAKER	
S2501		QSP4Z01-C01	PUSH SWITCH	
S4101		QSL4A13-C02	LEVER SWITCH	H. CENTER SW
S4102		QSTL435-C01	PUSH SWITCH	
		QSTL435-C01	PUSH SWITCH	
S6201		QSS4C22-C02	SLIDE SWITCH	Termination SW
S6202		QSS4C22-C02	SLIDE SWITCH	Termination SW
S6203		QSS4C22-C02	SLIDE SWITCH	Termination SW
S6204		QSS4C22-C03	SLIDE SWITCH	SET UP SW
S6501		QSS4C22-C02	SLIDE SWITCH	AFC SW
TI19901	△	A76038-T	POSISTOR	
X1301		CE41953-001	CRYSTAL	

## EXPLODED VIEW PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS
1	CM34741-001	CONTROL BASE	
2	CM46758-A01	VOLUME KNOB	×4
3	CM46759-A01	PUSH KNOB	×8
4	QMCB005-001	3P INLET	
5	SSSB3008Z	TAPPING SCREW	×4
6	CEMR004-001	4P CONNECTOR	
7	QSP4Z01-C01	PUSH SWITCH	
8	CE41929-00A	FLYBACK TRANSF	
9	CM34739-A01	HVT BASE	
10	CM11897-A01	HVT HOLDER	
11	CM34850-A01	HVT COVER	
12	A22JCM00X-AQ	PICTURE TUBE	
13	CELD023-001	DEG COIL	
14	CJ27569-00A	DEF YOKE ASSY	
15	CH30442-00A	BRAIDED ASSY	
16	CH41987-00A	BRAIDED SUB ASSY	
17	CE40266-00A	P. C. MAGNET	
18	CE40666-00A	WEDGE	×3
19	QZF2207-001	FOOT	×4
20	GBSB3008Z	TAPPING SCREW	×4
21	CM34735-001	GUIDE RAIL	
22	CM34851-001	GUIDE RAIL	
23	SBSF3008Z	TAPPING SCREW	×6
24	CM46755-001	SLIDER	
25	SBSF3008Z	TAPPING SCREW	
26	CM22141-001	BOTTOM COVER	
27	CM44286-00A	SCREW	×6
28	HSA0899-01D	CONE SPEAKER	
30	CM22138-A0A	INPUT PANEL ASSY	
31	CM46762-001	GUARD	×2
32	NNS3000Z	NUT	×4
33	CEMR002-001	7P CONNECTOR	Y/C358 OUT
34	CEMR003-001	7P CONNECTOR	Y/C358 IN
35	CM11826-A01	TOP COVER	
36	CM44286-00E	ASSY SCREW	×12
37	CM22092-A01	REAR COVER	
39	SDSA3008M	SCREW	
40	CM34744-001 (R)	ROLL R LABEL	
41	PU46361-2	HANDLE	
42	PU46385-3	HANDLE COVER	×2
43	SHSP4012R	SCREW	×2
44	NFS4000Z	NUT	×2
45	CM46754-001	SLIDE HOLDER	
100	CM11827-A0A	FRONT PANEL ASSY	Include No. 101~106
101	CM34740-A01	CONTROL SHEET	
102	CM46756-A01	POWER KNOB	
103	CM46757-001	SPRING	
104	CM46803-001	GUARD	
105	NFS3000Z	NUT	×2
106	CM46941-001	EARTH PLATE	

# EXPLODED VIEW





# PRINTED CIRCUIT BOARD PARTS LIST SIGNAL PC BOARD ASS'Y (FX-1026A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R1338	QVPC611-202HZ	V R (DL LEVEL)	2k $\Omega$
R1351	QVPC611-203HZ	V R (PAL SUB CHRO	MA) 20k $\Omega$
R1814	QVPC611-104HZ	V R (NORMAL FF PU	LSE PHASE) 100k $\Omega$
R1816	QVPC611-104HZ	V R (P/C FF PULSE	PHASE) 100k $\Omega$
CAPACITOR			
C1215	QAT3710-300MZ	TRIM CAPACITOR	
C1236	QETC1CM-337Z	E CAP.	330 $\mu$ F 16V M
C1240	QETC1CM-108Z	E CAP.	1000 $\mu$ F 16V M
C1241	QETC1CM-108Z	E CAP.	1000 $\mu$ F 16V M
C1242	QETC1CM-337Z	E CAP.	330 $\mu$ F 16V M
C1243	QETC1CM-337Z	E CAP.	330 $\mu$ F 16V M
C1308	QCT25CH-120Z	C CAP.	12pF
C1309	QAT3710-300MZ	TRIM CAPACITOR	
C1311	QFV71HJ-563MZ	TF CAP.	0.056 $\mu$ F 50V J
C1314	QEN61HM-474Z	BP E CAP.	0.47 $\mu$ F 50V M
C1328	QAT3710-300MZ	TRIM CAPACITOR	
C1332	QAT3710-300MZ	TRIM CAPACITOR	
C1341	QAT3710-300MZ	TRIM CAPACITOR	
C1343	QFV71HJ-104MZ	TF CAP.	0.1 $\mu$ F 50V J
C1802	QCT25CH-121Z	C CAP.	120pF 50V J
C1803	QCT25CH-220Z	C CAP.	22pF 50V J
C1804	QCT25CH-151Z	C CAP.	150pF 50V J
C1805	QCT25CH-101Z	C CAP.	100pF 50V J
TRANSFORMER			
T1302	CE40394-001	B P TRANSF	
COIL			
L1202	A76186-18Z	PEAKING COIL	18 $\mu$ H
L1203	A76186-12Z	PEAKING COIL	12 $\mu$ H
L1302	A76186-8.2Z	PEAKING COIL	8.2 $\mu$ H
L1303	A76186-8.2Z	PEAKING COIL	8.2 $\mu$ H
L1304	A76186-39Z	PEAKING COIL	39 $\mu$ H
L1305	A76186-4.7Z	PEAKING COIL	4.7 $\mu$ H
L1306	A76186-2.2Z	PEAKING COIL	2.2 $\mu$ H
DIODE			
D1205	1SS133-T2	SI. DIODE	
D1206	1SS133-T2	SI. DIODE	
D1207	1SS146-T2	SI. DIODE	
D1210	1SS133-T2	SI. DIODE	
D1211	MA4082 (L) -T2	ZENER DIODE	
D1212	1SS133-T2	SI. DIODE	
D1301	1SS133-T2	SI. DIODE	
D1302	1SS133-T2	SI. DIODE	
D1303	1SS133-T2	SI. DIODE	
D1304	1SS133-T2	SI. DIODE	
D1305	1SS133-T2	SI. DIODE	
D1306	1SS133-T2	SI. DIODE	
D1307	1SS133-T2	SI. DIODE	
D1308	1SS133-T2	SI. DIODE	
D13090	1SS133-T2	SI. DIODE	
D1801	1SS133-T2	SI. DIODE	
TRANSISTOR			
Q1204	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1207	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1208	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1209	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1211	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1212	2SC1740S (QR) -T	SI. TRANSISTOR	



SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q1213	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1214	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1215	2SA933S (QR) -T	SI. TRANSISTOR	
Q1217	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1218	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1219	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1220	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1221	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1304	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1305	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1306	2SA933S (QR) -T	SI. TRANSISTOR	
Q1308	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1310	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1801	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1802	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1803	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1804	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1805	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1806	2SC1740S (QR) -T	SI. TRANSISTOR	
Q1807	2SC1740S (QR) -T	SI. TRANSISTOR	
IC			
IC1201	AN5615	I. C.	
IC1202	TC4066BP	I. C. (M)	
IC1301	AN5625N	I. C.	
IC1801	TC4066BP	I. C. (M)	
IC1802	TC4538BP	I. C. (M)	
IC1803	TC4538BP	I. C. (M)	
OTHERS			
	CHA101N-24P-M	MHI CONNECTOR	
	SBX-S005A	SECAM MODULE	
DL1201	CE41679-001	DELAY LINE	
DL1302	CE41042-002	DELAY LINE	
DL1303	CE41489-001	1H DELAY LINE	
X1301	CE41953-001	CRYSTAL	

## DEF. PC BOARD ASS'Y ( FX-2006A )

SYMBOL NO.	PART NO.	PART NAME	REMARKS		
VARIABLE R					
R2425	QVPE605-501H	TRIM. RESISTOR	(V. HEIGHT NORMAL)		
R2426	QVPE605-102H	TRIM. RESISTOR	(V. HEIGHT UNDER)		
R2427	QVPE605-501H	TRIM. RESISTOR	(V. LIN.)		
R2433	QVPCA02-501H	V R (V. CENTER)	500 $\Omega$		
R2526	QVPC611-502HZ	V R (H. HOLD)	5k $\Omega$		
R2550	QVPE605-103H	TRIM. RESISTOR	(H. POSITION)		
FUSIBLE R					
R2778	QRZ0054-4R7M	F R			
RESISTOR					
R2429	QRX019J-5R6S	MF R	5.6 $\Omega$	1W	J
R2435	QRX019J-1R2S	MF R	1.2 $\Omega$	1W	J
R2529	QRD123J-101SX	C R	100 $\Omega$	1/2W	J
R2531	QRG019J-121S	OM R	120 $\Omega$	1W	J
R2540	QRG019J-102S	OM R	1k $\Omega$	1W	J
R2543	QRG019J-221S	OM R	220 $\Omega$	1W	J
R2544	QRG019J-680S	OM R	68 $\Omega$	1W	J
R2545	QRG019J-182S	OM R	1.8k $\Omega$	1W	J
R2547	QRX019J-1R2S	MF R	1.2 $\Omega$	1W	J
R2558	QRX019J-4R7S	MF R			
R2606	QRG039J-180A	OM R	18 $\Omega$	3W	J
R2771	CJ39520-00N	RESISTOR ARRAY			
R2772	QRD161J-223Y	C R	22k $\Omega$	1/6W	J
CAPACITOR					
C2408	QEE61VK-105BZ	TAN. CAP.	1 $\mu$ F	35V	K
C2410	QETC1CM-227Z	E CAP.	220 $\mu$ F	16V	M
C2424	QEN62AM-474Z	BP E CAP.	0.47 $\mu$ F	100V	M
C2507	QFV71HJ-224MZ	TF CAP.	0.22 $\mu$ F	50V	J
C2509	QCT25CH-181Z	C CAP.	180pF	50V	J
C2511	QCT25CH-271M	C CAP.	270pF	50V	J
C2513	QFP31HJ-332S	PP CAP.	3300pF	50V	J
C2517	QFZ0083-563MZ	MY CAP.	0.056 $\mu$ F		
C2524	QEM61HK-225MZ	E CAP.	2.2 $\mu$ F	50V	K
C2525	QFP42JJ-682M	PP CAP.	6800pF	630V	J
C2526	QFP42JJ-682M	PP CAP.	6800pF	630V	J
C2527	QFP42JJ-682M	PP CAP.	6800pF	630V	J
C2528	QFP42JJ-682M	PP CAP.	6800pF	630V	J
C2529	QFP42JJ-822M	PP CAP.	8200pF	630V	J
C2530	QEM61HK-225MZ	E CAP.	2.2 $\mu$ F	50V	K
C2531	QETC2CM-105Z	E CAP.	1 $\mu$ F	160V	M
C2532	QFK62AJ-335M	MM CAP.	3.3 $\mu$ F	100V	J
C2535	QFV71HJ-474MZ	TF CAP.	0.47 $\mu$ F	50V	J
C2536	QFV71HJ-474MZ	TF CAP.	0.47 $\mu$ F	50V	J
C2541	QFV71HJ-224MZ	TF CAP.	0.22 $\mu$ F	50V	J
C2542	QETB2EM-336	E CAP.	33 $\mu$ F	250V	M
C2545	QFV71HJ-474MZ	TF CAP.	0.47 $\mu$ F	50V	J
C2605	QFV71HJ-104MZ	TF CAP.	0.1 $\mu$ F	50V	J
C2606	QFV71HJ-104MZ	TF CAP.	0.1 $\mu$ F	50V	J
TRANSFORMER					
T2502	A76568-MA	H DRIVE TRANSF			
COIL					
L2501	CE40222-001	LIN. COIL			
L2502	CE41197-00C	WIDTH COIL			
L2503	CJ30030-038	HEATER CHOKE			
L2504	CJ30030-038	HEATER CHOKE			

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D2401	1SS133-T2	SI. DIODE	
D2402	1SS133-T2	SI. DIODE	
D2403	DFA1A4-T3	SI. DIODE	
D2404	1SR35-100A-T2	SI. DIODE	
D2501	1SS133-T2	SI. DIODE	
D2502	DFA1A4-4	SI. DIODE	
D2503	DFA1A4-T3	SI. DIODE	
D2504	DFA1A4-T3	SI. DIODE	
D2505	DFA1A4-T3	SI. DIODE	
D2506	DFA1A4-T3	SI. DIODE	
D2508	1SS133-T2	SI. DIODE	
D2509	MA4200 (M) -T2	ZENER DIODE	
D2771	HZ7B2L-C1	ZENER DIODE	
D2772	1SS133-T2	SI. DIODE	
D2773	1SS133-T2	SI. DIODE	
D2774	1SS133-T2	SI. DIODE	
D2775	1SS133-T2	SI. DIODE	
D2776	1SS133-T2	SI. DIODE	
D2777	DFA1A4-T3	SI. DIODE	
D2778	1SS146-T2	SI. DIODE	
D2779	1SS133-T2	SI. DIODE	
D2780	1SS133-T2	SI. DIODE	
TRANSISTOR			
Q2401	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2402	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2403	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2501	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2502	2SA933S (QR) -T	SI. TRANSISTOR	
Q2503	2SA933S (QR) -T	SI. TRANSISTOR	
Q2504	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2505	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2506	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2507	2SC1627A (Y) -T	SI. TRANSISTOR	
Q2508	2SC2749 (N-K)	SI. TRANSISTOR	
Q2509	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2511	2SC1740S (QR) -T	SI. TRANSISTOR	
Q2771	2SC1740S (QR) -T	SI. TRANSISTOR	
IC			
IC2401	AN5515	I. C. (M)	
IC2402	TC4538BP	I. C. (M)	
IC2501	HA11423	I. C.	
IC2502	TC4538BP	I. C. (M)	
IC2503	TC4066BP	I. C. (M)	
IC2505	TA78012AP	I. C. (M)	
IC2601	AN5265	I. C. (M)	
OTHERS			
RY2501	CHA101N-24R-M	MHI CONNECTOR	×2
S2501	CESK006-001	RELAY	
	QSL4A13-C02	LEVER SWITCH	H. CENTER SW

## CRT SOCKET PC BOARD ASS'Y ( FX-3017A )

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R3703	QVPE805-103H	V R (R CUTOFF)	10k $\Omega$
R3704	QVPE805-201H	V R (R DRIVE)	200 $\Omega$
R3713	QVPE805-103H	V R (G CUTOFF)	10k $\Omega$
R3714	QVPE805-201H	V R (G DRIVE)	200 $\Omega$
R3723	QVPE805-103H	V R (B CUTOFF)	10k $\Omega$
RESISTOR			
R3706	QRG019J-822S	OM R	8. 2k $\Omega$ 1W J
R3707	QRZ0039-332	COMP. R	3. 3k $\Omega$ 1/2W K
R3716	QRG019J-822S	OM R	8. 2k $\Omega$ 1W J
R3717	QRZ0039-332	COMP. R	3. 3k $\Omega$ 1/2W K
R3726	QRG019J-822S	OM R	8. 2k $\Omega$ 1W J
R3727	QRZ0039-332	COMP. R	3. 3k $\Omega$ 1/2W K
CAPACITOR			
C3751	QETB2EM-475	E CAP.	4. 7 $\mu$ F 250V M
C3752	QETC2EM-105Z	E CAP.	1 $\mu$ F 250V M
C3753	QCZ0121-102M	C CAP.	1000pF
COIL			
L3701	A76186-150Z	PEAKING COIL	150 $\mu$ H
L3711	A76186-150Z	PEAKING COIL	150 $\mu$ H
L3721	A76186-150Z	PEAKING COIL	150 $\mu$ H
L3751	CJ30030-024	HEATER CHOKE	
DIODE			
D3701	1SS133-T2	SI. DIODE	
D3711	1SS133-T2	SI. DIODE	
D3751	RM2C-LFA1	SI. DIODE	
TRANSISTOR			
Q3701	2SC2611	SI. TRANSISTOR	
Q3702	2SC2611	SI. TRANSISTOR	
Q3703	2SC2611	SI. TRANSISTOR	
OTHERS			
	CE41748-001	CRT SOCKET	

## CONTROL PC BOARD ASS'Y ( FX-4015A )

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R4101	QVAZ006-C010A	V R (CONT. BRIGHT	CHROMA VOLUME)
R4103	QVPC611-103HZ	V R (SUB CONTRAST )	10k $\Omega$
R4109	QVPC611-202HZ	V R (SUB BRIGHT)	2k $\Omega$
R4120	QVPC611-502HZ	V R (V. HOLD)	5k $\Omega$
R4121	QVPC611-103HZ	V R (SUB CHROMA)	10k $\Omega$
CAPACITOR			
C4101	QEKC1CM-107MZ	E CAP.	100 $\mu$ F 16V M
C4103	QEKC1CM-107MZ	E CAP.	100 $\mu$ F 16V M
DIODE			
D4101	1SS133-T2	SI. DIODE	
D4102	1SS133-T2	SI. DIODE	
D4103	1SS133-T2	SI. DIODE	
D4104	SML1216W	L E D 2 (G+R)	
TRANSISTOR			
Q4101	2SC1740S (QR) -T	SI. TRANSISTOR	
Q4102	2SC1740S (QR) -T	SI. TRANSISTOR	
Q4103	2SC1740S (QR) -T	SI. TRANSISTOR	
OTHERS			
S4101	QSTL435-C01	PUSH SWITCH	
S4102	QSTL435-C01	PUSH SWITCH	

## INPUT PC BOARD ASS'Y ( FX-6018A )

SYMBOL NO.	PART NO.	PART NAME	REMARKS
CAPACITOR			
C6201	QEKC1HM-335GMZ	E CAP.	3. 3 $\mu$ F 50V M
C6202	QEKC1HM-335GMZ	E CAP.	3. 3 $\mu$ F 50V M
C6203	QEKC1CM-336MZ	E CAP.	33 $\mu$ F 16V M
C6204	QEKC1CM-336MZ	E CAP.	33 $\mu$ F 16V M
C6205	QEKC1CM-107MZ	E CAP.	100 $\mu$ F 16V M
C6210	QEKC1CM-107MZ	E CAP.	100 $\mu$ F 16V M
C6299	QFV71HJ-474MZ	TF CAP.	0. 47 $\mu$ F 50V J
C6602	QEKC1HM-105GMZ	E CAP.	1 $\mu$ F 50V M
C6604	QEKC1HM-105GMZ	E CAP.	1 $\mu$ F 50V M
C6605	QEKC1CM-107MZ	E CAP.	100 $\mu$ F 16V M
DIODE			
D6201	1SS133-T2	SI. DIODE	
D6202	1SS133-T2	SI. DIODE	
D6203	1SS133-T2	SI. DIODE	
D6204	1SS133-T2	SI. DIODE	
TRANSISTOR			
Q6201	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6202	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6203	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6601	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6602	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6603	2SC1740S (QR) -T	SI. TRANSISTOR	
Q6604	2SC1740S (QR) -T	SI. TRANSISTOR	
IC			
IC6201	LA7016	I. C.	
IC6601	TC4066BP	I. C. (M)	
OTHERS			
S6201	QSS4C22-C02	SLIDE SWITCH	Termination SW
S6202	QSS4C22-C02	SLIDE SWITCH	Termination SW
S6203	QSS4C22-C02	SLIDE SWITCH	Termination SW
S6204	QSS4C22-C03	SLIDE SWITCH	SET UP SW
S6501	QSS4C22-C02	SLIDE SWITCH	AFC SW

## POWER PC BOARD ASS'Y (FX-9016A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R R9919 R9925	QVPC611-501HZ QVPC611-203HZ	V R (B1 ADJ) V R (BATTERY PROTECTOR)	500 $\Omega$ 20k $\Omega$
FUSIBLE R R9935	QRZ0054-150M	F R	15 $\Omega$
RESISTOR R9901 R9906 R9907 R9909 R9911  R9912 R9917 R9921 R9923	QRZ0094-100 QRD123J-473SX QRG029J-101A QRM055K-R33 QRD149J-1R0S  QRG039J-563A QRG029J-681 QRD123J-220SX QRD123J-330SX	UNF R C R OM R MP R C R  OM R OM R C R C R	  47k $\Omega$ 1/2W J 100 $\Omega$ 2W J  1 $\Omega$ 1/4W J  56k $\Omega$ 3W J 680 $\Omega$ 2W J 22 $\Omega$ 1/2W J 33 $\Omega$ 1/2W J
CAPACITOR C9901 C9902 C9903 C9904 C9907  C9909 C9910 C9911 C9913 C9914  C9915 C9916 C9917 C9918 C9919  C9920 C9922 C9923 C9924 C9925  C9926 C9927 C9928 C9929 C9930  C9931 C9940	QFZ9022-224M QCZ9036-472M QCZ9036-222M QCZ9036-222M QFZ9022-224M  QEZ0084-227R QCZ0122-821U QEHC2AM-106MZ QCF22HP-103M QCZ0122-821U  QFV71HJ-104MZ QEHC1CM-227MZ QEHC1CM-227MZ QEM51VM-477M QEHC1CM-227MZ  QFV71HJ-474MZ QEM61EK-106MZ QEHB1HM-228M QFV71HJ-474MZ QEHC1HM-336MZ  QEHC1CM-337MZ QEHC2CM-105MZ QCZ9034-472A QCZ9034-472A QCZ9034-472A  QCZ9034-472A QFLB1HK-103M	MF CAP. C CAP. C CAP. C CAP. M F CAP.  E CAP. C CAP. E CAP. CH C CAP. C CAP.  TF CAP. E CAP. E CAP. E CAP. E CAP.  TF CAP. E CAP. E CAP. TF CAP. E CAP.  E CAP. E CAP. C CAP. C CAP. C CAP.  C CAP. MYLAR CAPACITOR	0.22 $\mu$ F AC250V M 4700pF AC400V M 2200pF AC400V M 2200pF AC400V M 0.22 $\mu$ F  220 $\mu$ F 400V M  10 $\mu$ F 100V M 0.01 $\mu$ F 500V P  0.1 $\mu$ F 50V J 220 $\mu$ F 16V M 220 $\mu$ F 16V M 470 $\mu$ F 35V M 220 $\mu$ F 16V M  0.47 $\mu$ F 50V J 10 $\mu$ F 25V K 2200 $\mu$ F 50V M 0.47 $\mu$ F 50V J 33 $\mu$ F 50V M  330 $\mu$ F 16V M 1 $\mu$ F 160V M 4700pF AC400V P 4700pF AC400V P 4700pF AC400V P  4700pF AC400V P
TRANSFORMER T9901 T9902 T9903	CE41915-00B A76567-MA CE41916-00A	SWITCHING TRANSF P DRIVE TRANSF CHOPPER TRANSF	
DIODE D9901 D9902 D9903 D9904 D9905  D9906 D9907 D9908 D9909 D9910	LB-156-LFB RUIC-LFA1 EM01 EU2A-LFF4 FML-G12S  RD6.2ES (B3)-T2 ESAB82M-004 1SS133-T2 RD5.6ES (B3)-T2 1SS133-T2	DIODE BRIDGE SI. DIODE SI. DIODE SI. DIODE SI DIODE  ZENER DIODE S B DIODE SI. DIODE ZENER DIODE SI. DIODE	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D9911	1SS133-T2	SI. DIODE	
D9912	EU2A-LFF4	SI. DIODE	
D9913	RU1C-LFA1	SI. DIODE	
TRANSISTOR			
Q9901	2SC1627A (Y) -T	SI. TRANSISTOR	
Q9902	2SC2750 (MLK)	SI. TRANSISTOR	
Q9903	2SC1740S (QR) -T	SI. TRANSISTOR	
Q9904	2SC1740S (QR) -T	SI. TRANSISTOR	
IC			
△ IC9901	STR10006-A	I. C. (H)	
△ IC9902	AN5900	I. C. (M)	
△ IC9903	UPC4558C	I. C.	
△ IC9904	TA78012AP	I. C. (M)	
FUSE			
△ F9901	QMF51E2-2R5S	FUSE	2.5A
△ F9902	QMF51E2-4R0S	FUSE	4A
OTHERS			
△ LF9901	CE41094-00B	LINE FILTER	
△ LF9902	CE41094-00B	LINE FILTER	
△ RY9901	CESK006-002	RELAY	
△ TH9901	A76038-T	POSISTOR	



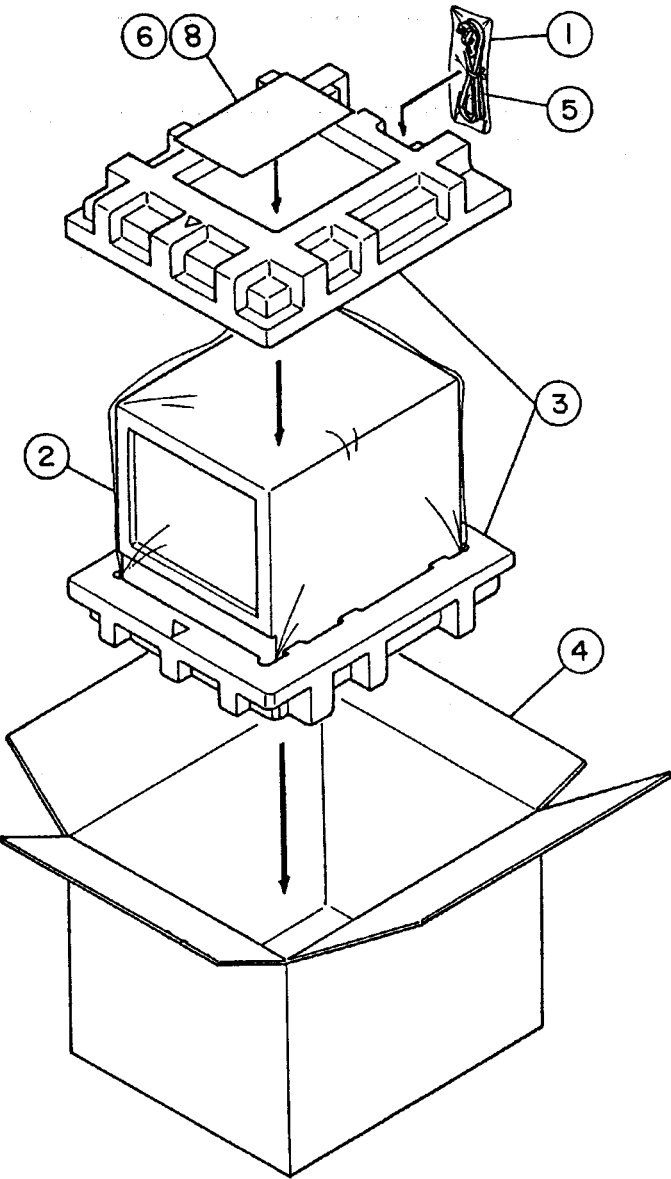
## MODULE PC BOARD PARTS LIST

The following module pc boards are supplied as assemblies.

The component parts on the module PC boards are available only when the parts are listed in the "MODULE PRINTED CIRCUIT BOARD PARTS LIST".

**SECAM MODULE PC BOARD Ass'y (SBX-S005A) within SIGNAL PC BOARD ASS'Y.**

PACKING



PACKING PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS
1	QPGA012-03005	POLY BAG	
2	CP30043-004	SET COVER	
3	CP10996-A0A	CUSHION	
4	CP10704-010	PACKING CASE	
5	QMP4718-200R	POWER CORD	
6	TM-1000PS-1B-A	INST BOOK	
8	CM22200-001	X-RAY CARD	

TM-1000PS

SCHEMATIC DIAGRAM

**NOTICE**

The voltage reading and waveform are measured at each point with a multi-meter and an oscilloscope while input a video signal (color bar) through the video input terminal (INPUT A) on the monitor.

The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.

Multimeter used

DC 20 kΩ/V

Given figures are all DC voltages.

Sweep speed of oscilloscope



H ⇒20μS/div

V ⇒5mS/div

Others ⇒Sweeping time is indicated

Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

**SAFETY**

FR (  ) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors and parts indicated with black shading (  ) in the circuit diagrams, be sure to ensure safety by using designated parts.

As to other parts too, use designated parts to maintain safety and performance.

**INDICATION OF PARTS SYMBOL**

Inside board (Example) FX-1026A : R1209⇒R209

**CIRCUIT DIAGRAM DISPLAY SYMBOLS**

**1. Resistor**

- Resistance value
- When no unit is provided : [Ω]
- K : [kΩ]
- M : [MΩ]
- Rated permissible power capacity
- When no display is made : 1/6 [W]
- Others : Display are provided
- Type
- Without indication : Carbon resistor
- OMR : Oxide metal film resistor
- UNFR : Non-Flammable resistor
- CMF,MFR : Coating metal film resistor
- FR : Fusible resistor

\*Composition resistor 1/2 [W] is indicated as "1/2S" or "Comp".


**2. Capacitor**


- Capacitance
- Over 1 [pF] Below 1 [μF]
- Withstand voltage
- No display : DC 50 [V]
- Others : DC withstand voltage [V]
- AC display : AC withstand voltage [V]
- Display of electrolytic capacitor is as follows.
- (Example)
- 47/50⇒Capacity [μF] /withstand voltage [V]
- \*NP : Non-polar (or Bipolar) electrolytic capacitor.
- Type
- No type display indication : Ceramic capacitor
- MY : Mylar capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- NP : Nonpolar electrolytic capacitor
- BP : Bipolar electrolytic capacitor
- TAN. : Tantalum capacitor

**3. Coil**

When no unit is displayed : [μH]


**4. Power supply**


 : B1


 : 12V


\*Respective voltage values are indicated.

**5. Test point & GND. symbol**


 : Test point of mini-GP pin


 : Only test point display

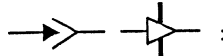
 : LIVE side ground

 : NEUTRAL side ground

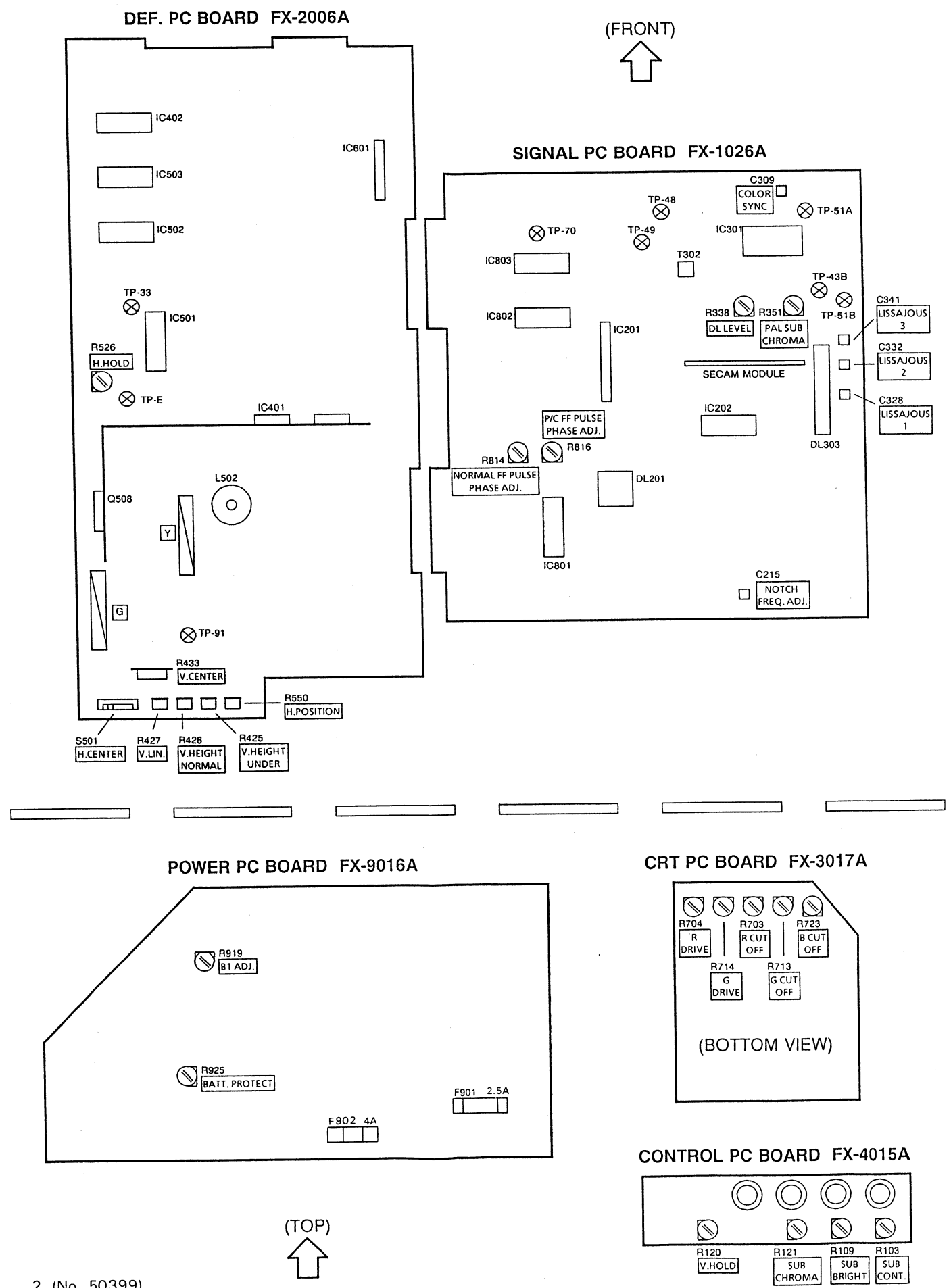
**6. Connecting method**

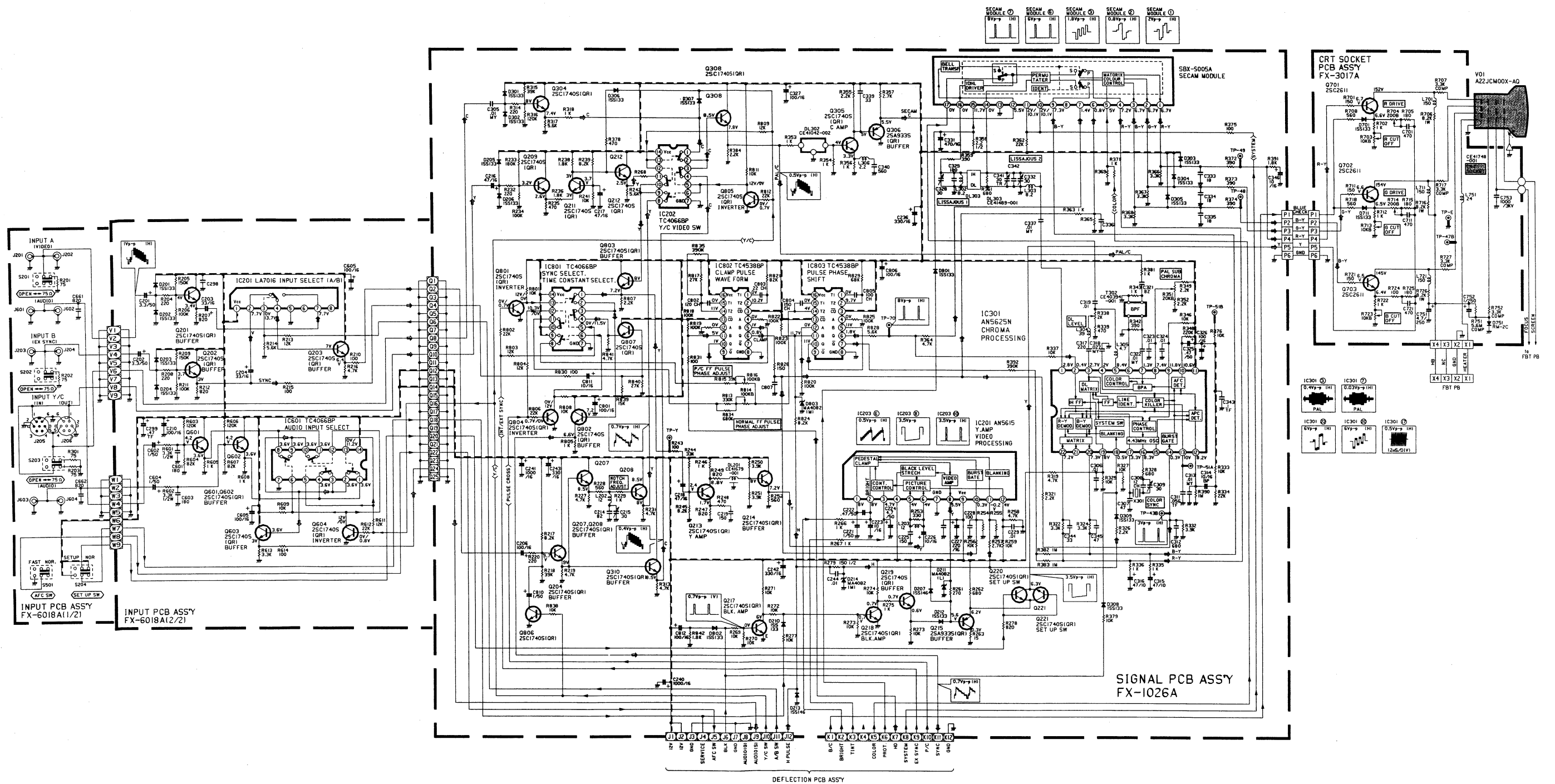
 : Connector

 : Wrapping or soldering

 : Receptacle

ALIGNMENT LOCATION

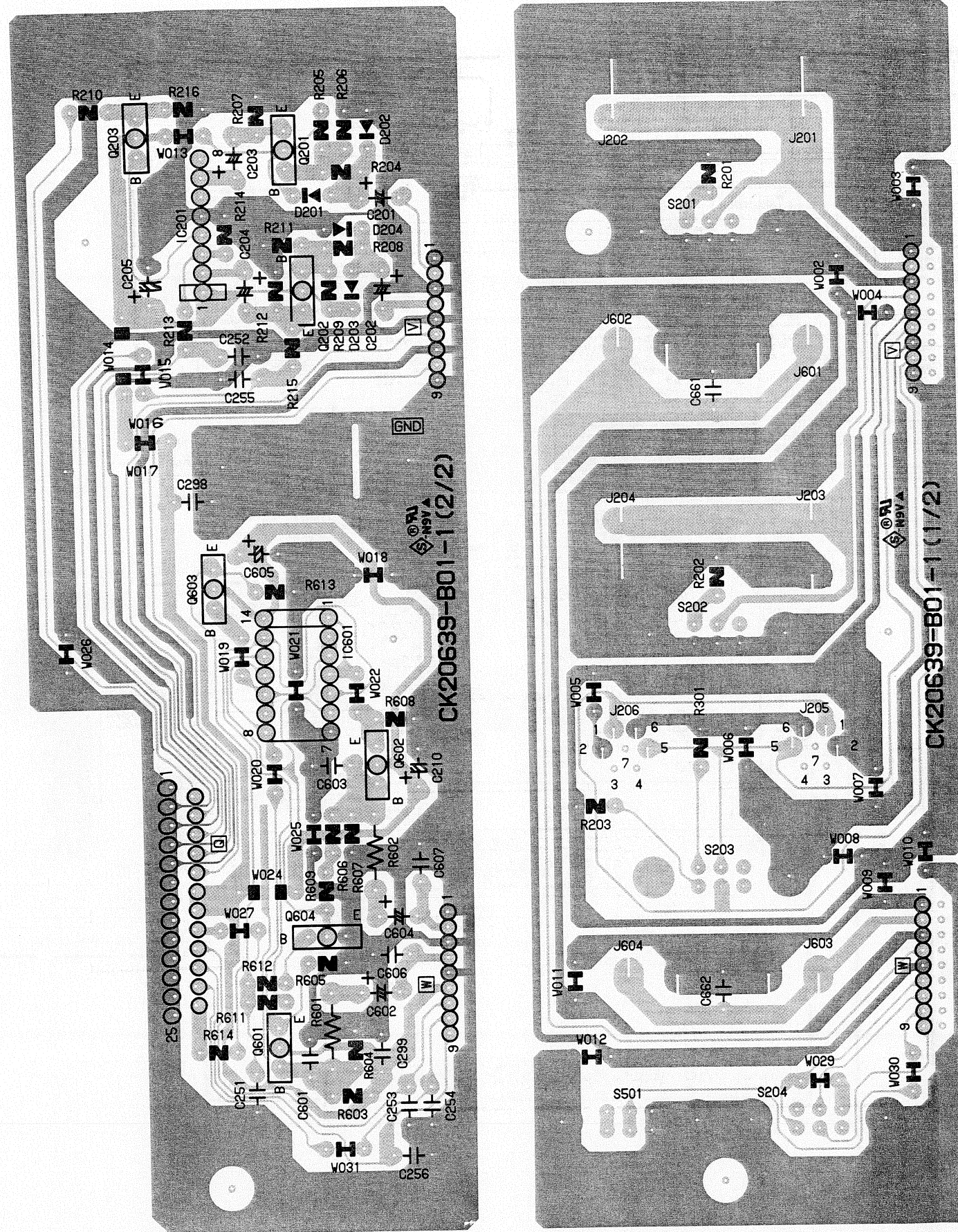




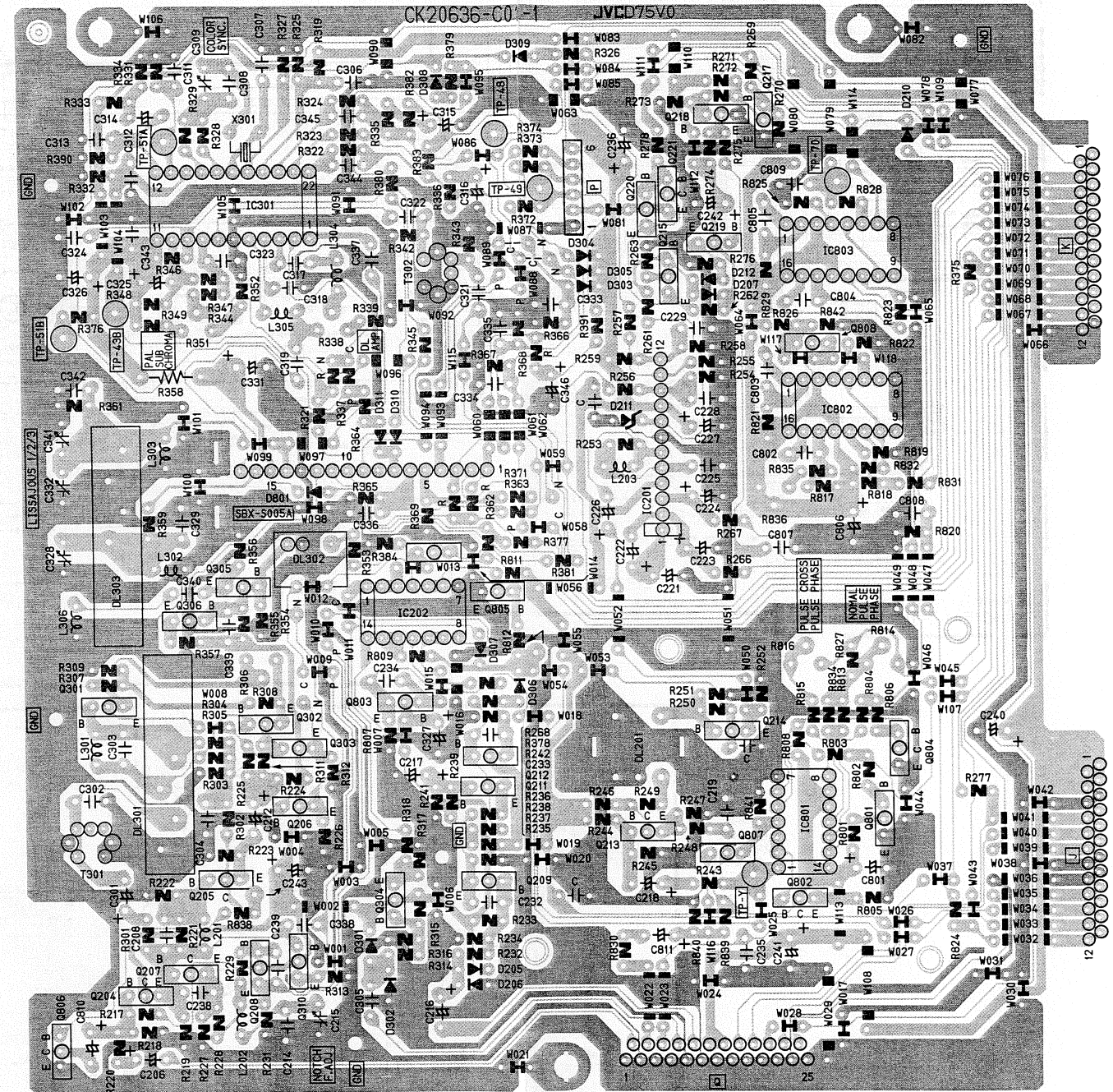
**NOTE FOR SERVICE**

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary:  $\perp$ ) side GND and the NEUTRAL (secondary:  $\text{---}$ ) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or never measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND at the same time. If above note will not be kept, a fuse or any parts will be broken.

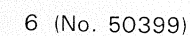




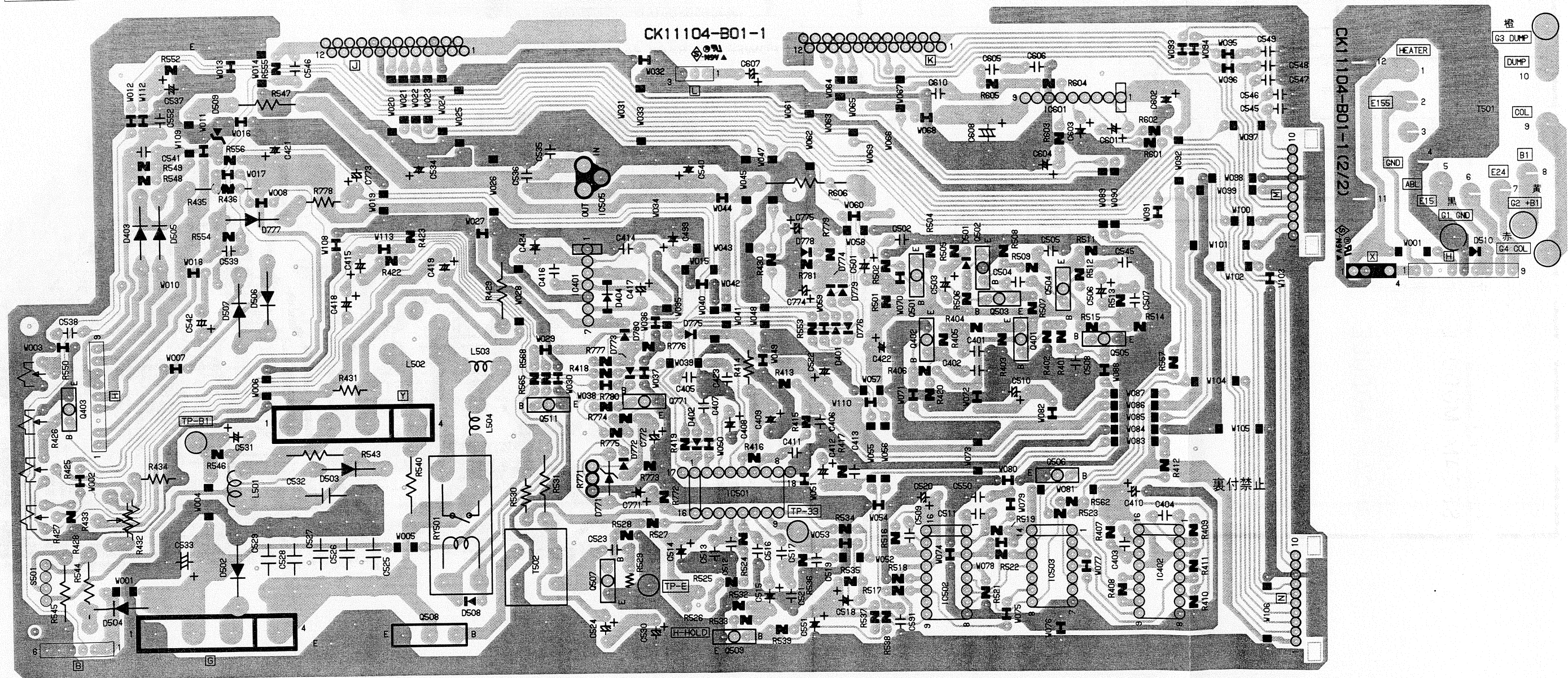
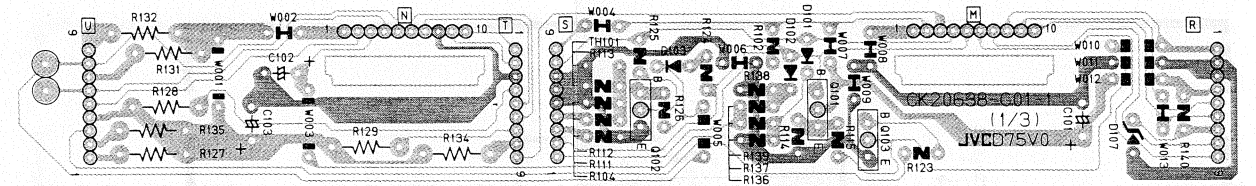
**SIGNAL PCB BACK PATTERN**



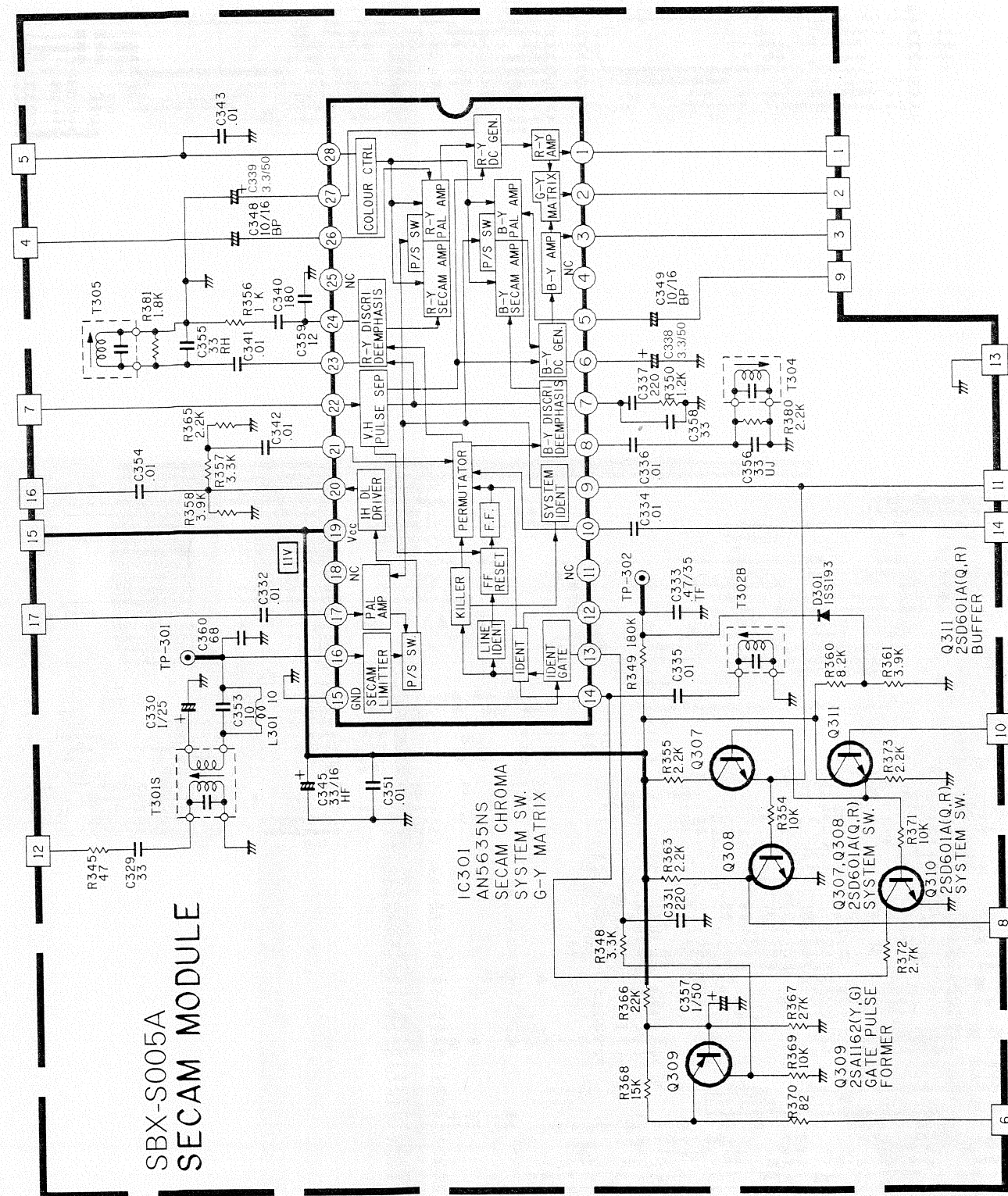




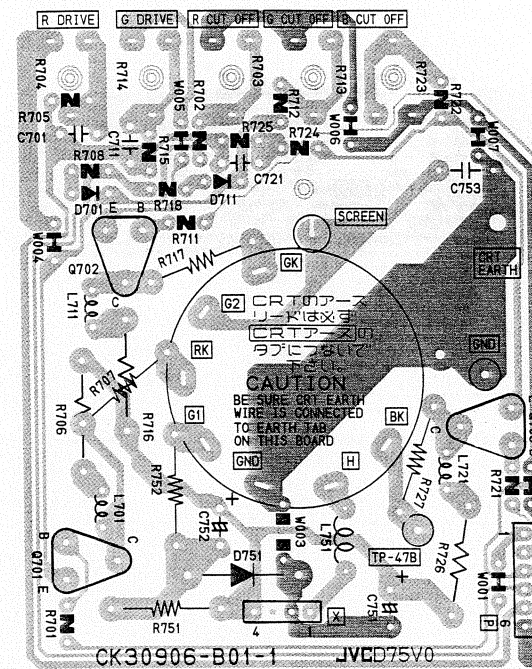




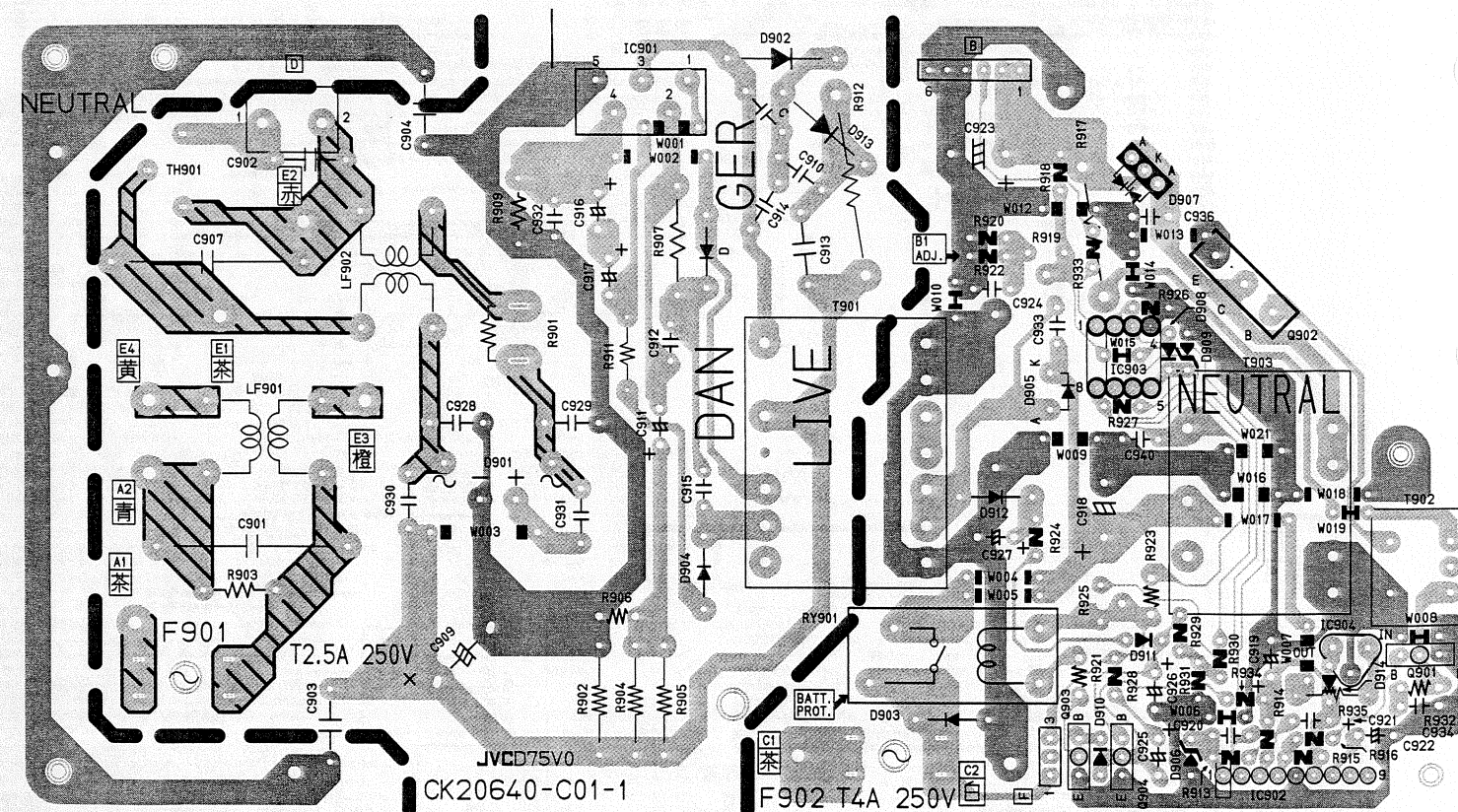




## CRT SOCKET PCB BACK PATTERN



## POWER PCB BACK PATTERN





## Basing of Transistor & ICs



2SC1740S  
2SA933S



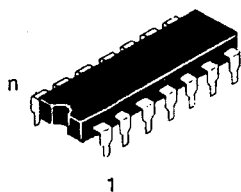
2SC1627



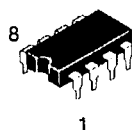
2SC2611



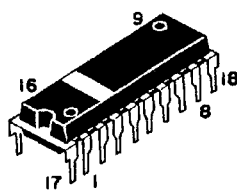
2SC2749  
2SC2750



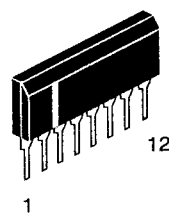
IC  
TC4066BP  
TC4538BP  
AN5625N



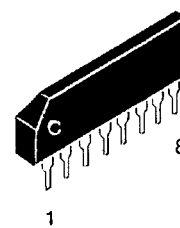
IC  
 $\mu$ PC4588C



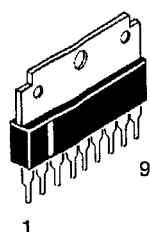
IC  
HA11423



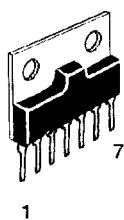
IC  
AN5615



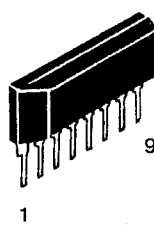
IC  
LA7016



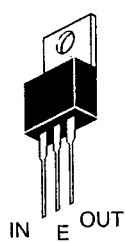
IC  
AN5265



IC  
AN5515



IC  
AN5900



IC  
TA78012AP



IC  
STR10006-A